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ABSTRACT

The intent of this document has been to provide a synthesis of the status of research on children's television that could be used as an information base for planning purposes. An outline or hierarchy of critical television research topics which need further investigation has been compiled from an analysis of major reference documents and personal interviews. Selected state-of-the-art documents are also reviewed. These documents focus on a number of aspects of the impact of television on children: (1) Television and Social Behavior: An Annotated Bibliography, (2) The Impact of Televised Violence, (3) Television and the Behavior of Preschool Children, (4) Learning from Television, and (5) A Summary of the Major Findings in the 2nd Year of Sesame Street. Another chapter contains descriptions of research projects in television for children that have been funded in fiscal year 72. In the final chapter, a comparison is made between research needs and current ongoing research activity. In the past, the most popular research areas have been content and presentation questions and viewing habits. Areas which still need investigation are: development, transmittal and technical problems, application, research planning and evaluation (process), and policy issues. Appendices are included which describe individual research projects. (CS)

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THE STATUS OF RESEARCH IN CHILDREN'S TELEVISION

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of the Information Secretariat

PS 007075

For the Interagency Panel
on Early Childhood Research and Development

January, 1972

Preface

This report has been prepared at the request of the Interagency Panel on Early Childhood Research and Development as part of its ongoing function to have available the information necessary to assist interagency cooperation with regard to the planning of early childhood research. The area of television instruction was identified in an earlier report of the Panel as one deserving priority attention.

Special thanks are given to Dr. Judith Chapman for her assistance in reviewing the literature and particularly for writing the summary of the abstracts of the Annotated Bibliography, the reference focusing on TV as entertainmen, to Ronald Ouellet for his able and ever ready general research assistance and to Doris Exum for her persistence and excellence in typing the manuscript. Dr. Edith Grotberg gave generously of her time in overall guidance and review of the manuscript.

It may be that finesse in composition in this document has been the victim of haste. However, it is believed the basic information and syntheses are here which can be used by the Panel for subsequent analysis and planning.

Ellen Searcy
January, 1972

THE STATUS OF RESEARCH IN CHILDREN'S TELEVISION

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CHAPTER I

OBJECTIVES AND OVERVIEW

Objectives and Overview

The primary objective of this report has been to prepare a document dealing with the status of research in children's television that could be used as an information base for planning purposes by the Interagency Panel. The information presented deals with basic data analyzed and synthesized in such a way that it presents first conclusions. As such it is a document with its own purpose and structure. However, its content and organization were planned to be useful to the Panel later, as well, should they wish to make a more qualitative analysis of the effects of the new communications technology on children.

What specifically does the document contain? Chapter II contains an outline or hierarchy of television topics which represent categories and subcategories of possible questions for future research. It can be used as a basic planning document in developing the objectives of an overall approach to research in children's television. In addition, the most critical areas needing investigation, those recommended most strongly in the documents reviewed as demanding attention, are described in Chapter II. These issues or questions are organized according to the major categories of the research outline. The outline itself was developed from reviews of major documents and interviews with experienced television researchers.

Chapter III contains the reviews of selected state-of-the-art documents. These reviews describe the purpose of each document, give a summary of its findings, and discuss the research gaps indicated. The documents vary greatly in nature - one deals with TV programs with an entertainment/informational purpose, another with instructional television, another with one aspect of television's impact - its effect on aggressive tendencies, another with the detailed findings of one program, and the last is an overall view of programs aimed only at preschool children.

In Chapter IV are the descriptions of 20 programs and projects funded or planned by Federal agencies in FY 72. In the personal interviews and document-review for this chapter we concentrated on obtaining information which would specify the objectives of plans and programs. The reasons were to get a comparison between research needs and research supported to meet those needs, and thus to see if there were major glaring gap areas in present research.

Chapter V makes some of these comparisons on a general, quantitative basis. This step, again, however, is seen only as one of the first in a possible series of planning moves by the Interagency Panel.

It should be noted that this report concentrates on television research relating to young children that has been conducted in this country, and primarily on Federal research efforts. Not included are studies dealing with adults only, or research on film or other audiovisual media. Further pursuit of TV research information should, perhaps, include consideration of non-Federal and international efforts. There has been no attempt to include a complete compilation of national or local television programs for children, although a section of the Bibliography lists references for locating this information.

To conclude, this report presents major research recommendations and indicates probable gap areas in children's television research. For analysis at a deeper level, the outline of individual research categories, and the description of present programs and plans for the future will be useful. Available also are a small library of reference documents and, not mentioned previously, a 50-page listing of individual research questions based on the outline categories. These latter two can be especially helpful in any further analysis of telecommunication research - an area of burgeoning importance.

CHAPTER II

SUMMARY OF RECOMMENDATIONS FOR FUTURE RESEARCH

SUMMARY OF RECOMMENDATIONS FOR FUTURE RESEARCH

In this section we will list the most critical issues or questions for future research that have been identified in our study of television for young children. These are the questions that have emerged from the analysis of major reference documents and personal interviews (listed at the end of this chapter), as well as the state-of-the-art documents reviewed in Chapter III.

For the purposes of organization and analysis, an outline was made of all the issues and questions identified. The complete outline of possible categories identifying research on children's television is included at the end of this chapter.

Generally, we will discuss here only the more comprehensive or significant questions. A more detailed and extensive listing of TV research questions covered by the whole range of categories in the outline is available should they be needed for future analysis and planning.

Major Research Categories

The questions discussed here are grouped according to the major categories of the research issues outline. These categories are shown below grouped under the headings I) Substantive Research Issues, II) Research Process Questions and III)Research and Policy Issues.

I. Substantive Research Issues

- A. Television and Process of Child Development
- B. Viewing Habits
- C. Content, Programming, and Presentation
- D. Development of Programs and Equipment
- E. Transmittal Systems and Technical Problems
- F. Application
- G. Study of Effects on Various Populations

II. Research Process Questions

- A. Research Planning

- B. Evaluation
- C. Methodology
- D. Duration of Study
- E. Kind of Study

III. Research and Policy Issues

- A. Social and Educational Needs, Use of Communications Technology Including Television, and Research Goals
- B. Utilization of Research Results
- C. Community Participation
- D. Research Organization
- E. Research Funding
- F. Regulations and Standards
- G. Structure and Operation of the Broadcast Industry

(See end of chapter for complete outline of research categories.)

Major Research Recommendations by Category

I. Substantive Research Issues

A. Television and Child Development

1. More research is needed which uses preschool age children and infants as subjects.

2. More research is needed about the influence of television on the overall psychological growth and development of young children, upon its impact on the growth of the total child.

3. To implement the above (2), studies synthesizing the results of research in cognitive, social-affective and physical growth must be undertaken and long-term interdisciplinary studies planned which will examine and relate all three developmental areas.

4. We need to study how TV in general affects the development and behavior of children and then how various aspects of television content or presentation affect specific areas of growth and behavior.

5. More research is needed on the conditions which may cause a child to be influenced in one way or another by television viewing - what are the precursors and predispositions for such influences?

6. To make the above (5) meaningful, research is needed that will give baseline data on societal (and parental) values about desired, acceptable development and behavior in children.

7. Looked at in another way - we must learn how TV viewing intermeshes with all the other environmental influences on the child to produce certain developmental and behavioral results.

8. We need answers to questions pertaining to the needs of children that are met by television viewing. Why do children watch TV? Would a change in TV fare or presentation change the desire of children to watch television?

9. In cognitive development, perhaps those questions most favored for investigation have to do with the effectiveness of television in teaching the higher level kinds of learning, such as problem solving and creativity, and whether and to what extent skills and information learned on TV are generalizable and retained. The role of effective forms of motivation for TV viewing is a major concern also.

10. In social-emotional development, more research is recommended on the understanding of observational learning and the role of imitation in social-emotional development. Researchers and child development people believe there should be more research on the effects of TV on many aspects of social behavior and personality development. The effects of viewing violence on television is one concern among many. Studies on the use of TV to promote positive feelings of self-worth and to teach the value and methods of rewarding social relationships are believed to be especially important.

11. In physical growth, the primary concerns are to investigate the possible negative physical effects of TV and to develop ways of using TV to disseminate health care information.

B. Viewing Habits and Effects

A relatively substantial amount of research appears to have been done in this area, concerning questions of who watches what, the amount and duration of viewing and the amount and variety viewed in a given time. Important questions of the future will revolve around the control and guidance of children's viewing by parents. We need more research on the opinion of parents about television as a force in the lives of their children and the effect of parental versus children's control of TV watching.

More specifically, we need to determine how to motivate parents to become interested in what their children are viewing and in directing their children toward the most beneficial programs. What are the effects on viewing habits of parental interest and the educational environment of the home? And just as importantly, what are the effects of TV viewing on family life and family interaction? These last two questions have equal relevance in school settings with teachers and students as the subjects. Another important question in this area is how to determine the best mix of TV viewing with other available activities for children.

C. Content, Programming and Presentation

With regard to this area, which in the past appears to have concentrated on content analysis, recommendations for the future ask for more analysis of the effect, function and control of advertisement in children's programs and the study of interactive effects of instruction and entertainment in program content. Much more research is called for on the most effective ways of presenting content - on format, pacing, duration, and on the use of animation, fantasy and live characters. What are the comparative effects of seeing and hearing in TV presentation; what is the nature of the TV message: neutral, inhibiting, rewarding? These and other questions will be important in future research.

D. Development of Programs

In the developmental area, everyone is concerned with the need for more and better TV programs for young children. There is a serious lack of good software in the field. Two basic questions are involved. How do you identify a good program? How do you produce good programs? The answer to the first question is related to specifying program objectives and to research planning and evaluation. This will be discussed under planning. The production of good programs (after the funding problem is solved!) is a topic considered by many authors referred to for this paper. Each made a common plea: that the development of materials for children's TV programs be, in effect, a collaborative effort. A process must be developed which solicits and makes use of the contributions of research specialists in child development, television writers and producers, educators and parent groups, and children. One of the most frequently recommended ways to start is to develop, and to disseminate to TV producers, guidelines for TV program development and presentation that apply what has already been learned about child development by researchers and educators. Some promising efforts of this kind have been made (the Sesame Street program); more are needed. Another important problem is the development of educational materials for parents and other change agents about how to make the most of TV in helping their children grow. A different kind of problem in this area is the need for field tested telecommunications equipment in various modes which can be evaluated with various kinds of software (programs), for different viewing populations.

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E. Transmittal Systems and Technical Problems

Those sources dealing with this subject frequently start the discussion with a statement that modern communications technology provides extremely cost-effective alternatives to current systems for the delivery of educational and informational services. The best potential of coaxial cable systems is perhaps to provide a range of educational and social programs to those in densely populated areas, making use of the "wired city" to revitalize inner-cities. Satellite-based systems, conversely, are an ideal means of reaching rural and migrant populations and those in regions isolated from conventional means of communication. Listed below are some of the kinds of experiments suggested for answering such questions as what are the best uses for each of the different transmittal systems? What combinations of different information delivery systems (including live presentation) are useful for different purposes?

What are the implications for learning in social, cognitive and physical development of the possibility offered by new delivery systems for two-way communication?

1. Experiments with simple, one-way telecommunications systems using existing broadcast facilities.

2. Experiments with more complex systems, transmitting materials from national resource banks to community learning centers, to homes,and including moderate interactive capacity.

3. Experiments with considerably more complex two-way capabilities, such as those using the telephone for video as well as audio transmission.

4. Studies including tie-in with the delivery system of computerized data banks of educational materials and diagnostic data about individual users.

5. Study of two-way video monitoring for the economical supervision of on-the-job training and for observation of children to insure them proper care and instruction.

6. The development of inexpensive, portable, two-way video facilities for short-range transmissions.

One important problem that relates to all of the above is the need for a technology that would permit easy interchangeability of software within a medium or across media. Many more problems, associated with telecommunications technology, need careful study.

F. Application

The major focus of concern in this area is the need for research on the effectiveness or impact of TV in combination with a variety of other influences - after consideration of its effectiveness as the sole or primary medium of influence or instruction. For example, what are its effects when used as a supplement to or as an integral part of instruction in conventional classrooms (preschool, kindergarten or elementary)?

Is it more or less effective when used with other mass media materials (video recordings, cassette systems, film, records)? Are carefully integrated multimedia systems, with TV as a component, the most effective means of influencing behavior?

What is the role of human intervention in the learning process when television is a source of influence? How can teachers, parents, paraprofessionals and peers work to assist the beneficial impact of TV? An essential aspect of application is the training of the human change agents who may play a crucial role in making television beneficial to children.

G. Various Populations and Effects

This category was included to point out that research in the above areas must be designed for a variety of subpopulations and the impact of many variables tested. For example, we need to determine the effects of television on the cognitive, affective and social learning of children of different SES levels, ethnic backgrounds and ages; we must determine the interaction effects of format, content and mode of presentation and which combinations are the most effective for children with different learning abilities and styles. There is perhaps a special need to determine whether the use of television can be developed to make growth and learning more productive for children with needs of a special kind - for the physically handicapped, the mentally retarded, the emotionally disturbed.

Many investigators are concerned that there are hardly any studies designed to determine the long-term effects of television viewing. In all aspects of experience with child development, we need to know what is retained from viewing TV and how it manifests itself in later behavior - whether it is social behavior, physical influence or cognitive attainment or ability.

Of concern also is the relatively strong emphasis on the negative effects of television watching and the neglect of a focus on its possible positive influences. Gerald Lesser, in his as yet unpublished book, Children and Television: Lessons from Sesame Street, summarizes some logically beneficial aspects of television that have as yet gone unstudied by researchers.

> But considerable logic does suggest that television's educational contributions could be substantial and that experimentation to develop this potential is warrented. First, for whatever reasons, children regard television as pleasant recreation and we all know how powerful learning can be when it is sought out by the child himself because of the pleasure it provides. Second, television is totally nonpunitive and in contrast to most of the child's relationships with people, if it becomes threatening, he can control it completely simply by turning the set off or refusing to watch. Third, television presents a continuous parade of human models

> for the child to observe. Beyond displaying the varieties of people to the child, it, fourth, can transport him visually to all those places, events, and experiences that he can not possibly encounter in person. Fifth, for good or ill, television is our culture's major source of shared experience. ....It is impossible to estimate the degree to which television actually plays the role of providing shared experience for parents and children. Once again, television's logical function remains virtually unexplored.*

II. Research Process Questions

The design of research programs and projects in such a way as to make possible their proper evaluation - that is, the determination as to whether objectives have been met and as to what effects are due to what causes - is one that is of much concern among those involved with the conduct of "good" research. It is a major consideration in laboratory studies where variables may be identified and controlled and it is a major problem in field or naturalistic studies where variables may be unidentified, as well as difficult if not impossible to control. The problem is of particular relevance in the area of television research where the real life effects of TV viewing is the big research question. We encountered no studies concerned with the conditions under which the effects of TV viewing are manifest in the everyday life of children viewers. How do we determine what children learn from TV about social relationships, about schools and learning, about justice and the police-court system, about love and sex - in short, about the kind of people and behavior it is permissible to imitate that they apply in real life? A difficult research question and one for which the methodology has yet to be developed.

And since it is the long-term effects of TV in real life that are perhaps of the greatest significance, the development of theory on which to base long-term research strategies is an area suggested for study. We have discussed the need for interdisciplinary study of the effect of TV on the welfare of the whole child - more research is needed on how to do this effectively.

Returning to the question as to whether research and development of TV presentation is "worth" it in any particular case, the systems engineers have something to offer to research planners. In simplified terms the process is to establish objectives stated in operational or behavioral terms, to develop materials designed to meet those objectives, to revise the materials based on a series of tests with the subject population, until materials are produced which achieve the desired results or objectives. The highly successful Sesame Street series used this technique to develop its programs before airing them, and from this kind of criterion-based research evaluation producers were able to predetermine the instructional effectiveness of their research and development.

Gerald Lesser describing the process of goal-setting for Sesame Street introduces the topic by stating the following.

> With only a few tremors of shocked surprise by Board members over being asked to provide more than window-dressing, the Board was formed, went to work and began to deliver ideas about educational goals and methods that provided a base from which a creative television staff could begin to operate......Their initial responsibility,however, was to plan and conduct a series of seminars to identify the premises from which educational goals could be specified and then to develop an explicit statement of these goals.

(See Appendix B for a listing of Sesame Street goals.)

With the systems approach, research evaluation is closely tied to research planning, of which the first essential ingredient is a detailed statement of goals and objectives.

Finally, evaluative research of television must consider its cost-effectiveness. When used for reaching a very large audience TV has been shown to be much cheaper than conventional systems in cost per child. This and other questions need additional study, however. For example, cost-effectiveness must be determined about various aspects of hardware delivery systems - about cable cost, local station costs, and receiver costs, and these looked at in conjunction with child-viewing habits. All aspects of TV development and application must be looked at from the view of cost-benefit analysis.

III. Research and Policy Making

The use of modern communications technology as a means of effectively and cheaply delivering educational and community services to "normal" and needy children in our country has been earmarked for special study by the White House and by leading officials in our government departments. This concern has called for and made necessary the consideration of the research planning and utilization necessary for mounting such a complex services delivery system. In the case of our subject, social needs are at the very base of the research recommendations made in this report. A crucial question, and one needing consideration by research planners, is to what extent research can be an arbiter in future policy making in this (or any other) social needs area. (See Scott Briar's An Exploratory Study of the Connection Between Research and Social Policy Development, January 1971.) A related question is how the knowledge results of research can be made more useful to policy makers and other potential users. This raises the important issue of the need and means to utilize research results - utilization defined as disseminating the findings of research in ways which explain how they may be applied. Methods of effectively disseminating useful research results to a variety of consumers must become an object of research investigation.

Since in the area of concern here - television research - what is being studied is a medium of communication, of information delivery and dissemination, there are great opportunities to advance research on dissemination methods. And some of the descriptions of proposed research do suggest the need to develop means of delivering the TV message to several audiences other than children: to parents, to teachers and others who work with children. For example, one reference points out the "lack of adequate systems for disseminating innovations in early childhood education" to state and local educational agencies, administrators of early education programs, teachers and day care staffers. Another suggests that parent education programs on child development should "first be presented via local TV stations with experimental programs of varying duration, followed by viewer surveys to determine parent interest and acceptance."

The issue of research utilization is conceived primarily as one of reaching audiences other than children - its purpose is to translate the results of research and development work into a form and language that can be understood and used by parents and other intervention agents, by TV writers and producers, and by legislators and policy makers. Most attention in research has been given to the former - the use of television itself as a way of providing parent, teacher and paraprofessional education is a relatively popular research objective. A little progress has been made in the formal investigation of the second area, and perhaps the most work needs to be done in the last - studying ways of getting policy makers to use research results in planning social programs.

We will not discuss in detail the remaining policy issues listed - except one. They are somewhat self-explanatory and the following detailed outline of issues gives further indication of the kind of work needed. The remaining issue we will consider briefly is that of the control and significance of cable TV. The potential is now available for the expansion of cable TV into the nation's 100 largest cities. This is seen as a giant step toward what sociologists are beginning to call "the wired nation" - a coaxial cable running into every nousehold and capable of carrying signals into a television set, stereo or computer console as well as return signals from the household to other points along the network of wires. The key word is "interactive". "With present one-way television the viewer just sits and watches. With a two-way system, he can react to what he sees and the tube will react to his reaction."

The political question is how will the full range of channel wealth made available by cable be used? Who is going to control who gets what, when and how? Whose interest will be served - those of industry or the public? Will the promise of cable go the way of the hopes of FM radio?

Perhaps more closely aligned with research concerns is the question which deals with the social consequences of the enormous potential use of cable TV - of its effect on family and community life and the life of the nation. (The National Science Foundation has made a grant to the Center for Policy Research to study the social effects of cable TV and the Panel will want to keep up-to-date with this investigation as it progresses.)

The possible social and policy issues associated with the use of cable television are many and complicated and the need very great to plan appropriate research to make its application effective. Yet the study of cable TV is but one of many areas of research in communications technology for Federal agencies to undertake. The work of the Interagency Panel in this field can be of much importance.

Comprehensive Outline of Content, Process and Policy Questions Relating to Research on TV for Young Children

I. Areas of Substantive Research Issues and Questions

  A. TV and Child Development

    1. General--ex., reasons children watch TV

    2. Cognitive development

      a. Visual/Auditory perception and attention

      b. Kinds of learning - naming, discriminations, concept learning, high level thinking and problem solving

      c. Kinds of content - reading, language development, arithmetic

      d. Effects

    3. Social-emotional development

      a. Observational learning--ex., role of imitation in social-emotional development, effect of different kinds of models, conditions of observational learning

      b. Effect on social-emotional development - self-worth, positive self-image, social relationships, violence and aggression

    4. Physical health and development

      a. Possible negative effects - passivity, dsyfunction, eye strain, seizures

      b. Health care and education

    5. Learning

      a. Creativity

      b. Transfer

      c. Retention

      d. Motivation

      e. Habituation

I. Substantive, cont.

   6. Health, education, social services for total child development
   7. Ecological studies on interactive effects of child, television and other elements of the environment
   8. Other

  B. Viewing Habits

   1. Amount of viewing
   2. Non-viewing activities in relation to TV viewing
   3. Who controls viewing
   4. Duration of viewing
   5. Amount and variety viewed in a given time
   6. Who watches what
   7. Attitudes toward television
   8. Home influences and effects
   9. School influences and effects
   10. Other

  C. Content, Programming and Presentation

   1. Content
      a. Commercials
      b. Entertainment
      c. Amounts and types of TV programming (content analysis)
   2. Presentation
      a. Format
      b. Color
      c. Quality of reception

- d. Length
- e. Captioning for the deaf
- f. Pacing
- g. Animation
- h. Dramatic presentation
- i. Live vs. fantasy characters
- j. Comparative effects of sights and sounds
- k. Use of TV imagery conventions vs. printing conventions

3. Interactive effects of above

4. Nature of TV message: neutral, inhibiting, punishing, rewarding

5. Other

D. Development of Programs

1. Program or materials development
    - a. Develop child development guidelines for use in program development
    - b. For child instruction and development
    - c. For parent and other change agent education
    - d. For community involvement and understanding
    - e. Development by collaborative effort between researchers, program writers, educators and children

2. Equipment development

3. Model development for demonstrations

4. Innovative methods

E. Transmittal Systems and Technical Problems

1. General--ex., best uses of different systems, when to use live presentation, best mix of delivery modes, the effects of two-way communication

2. Transmittal systems
    a. Cable
    b. Satellite
    c. Terrestrial - conventional television
    d. Videotape monitoring, direction
    e. Cassette systems
    f. Computer tie-in
3. Other

F. Application/how, where, when used and effects

1. Sole medium of instruction for individual
2. Primary medium of instruction for a geographical area
3. Combined with other media, modes, materials, systems
    a. Conventional instructions
    b. Multimedia systems
    c. Other mass media (print or audiovisual materials)
    d. Other
4. Used with human assistance or follow-up
    a. Teachers in school situation
    b. Child day care specialists
    c. Paraprofessionals
    d. Parents in home or out
    e. Peers
    f. Other
5. Training of assistants for use of materials, for understanding child development

6. Viewed in home
7. Viewed as part of programs outside home: day care, preschool, school
8. Viewed in hospitals or institutions
9. Group or solitary viewing
10. Television in other countries
11. Other

G. Study A-F in terms of varying subpopulations and effects

1. Subpopulations
    - a. Ages - prenatal, 0-1, 1-2, 2-3, 3-4, 4-5, 5-6, 6-7, 7-8, 8-9, 9 and above
    - b. SES - lower class, middle class, above middle class, disadvantaged, advantaged, heterogeneous
    - c. Ethnicity - Black, Anglo, Spanish speaking, American Indian, Eskimo, ethnic mix, migrant, bilingual
    - d. Educational level - preschool, elementary school, above elementary school
    - e. Location - urban, suburban, rural, isolated, small town or city, ghetto or inner city
    - f. Gifted
    - g. Handicapped - multihandicapped, speechless or speech impaired, language delayed or impaired, deaf or hearing impaired, blind or sight impaired, deaf and blind, brain-damaged, mentally retarded, emotionally disturbed, learning disability
2. Individual differences: intellectual ability, learning style, viewing style
3. Effects: positive or beneficial effects, negative effects, long-term effects

II. Areas Relating to Research Process Issues

- A. Research Planning
- B. Evaluation
    1. Cost benefit studies
    2. Measure quality of production and reception
- C. Methodology
    1. Problems of research in the laboratory, naturalistic setting, surveys
    2. Methods of measurement
    3. Research which measures impact of TV in child's everyday life
    4. Longitudinal studies
- D. Duration of study -- longitudinal studies
- E. Kind of study -- basic, applied, interdisciplinary, state-of-the-art
- F. Other

III. Study of Research and Policy Making Areas and Issues

- A. Social and educational need, use of communications technology, including television, and research goals
- B. Utilization of Research Results (Dissemination and Application)
    1. By TV producers/programmers
    2. By researchers and scientists in other disciplines and industry
    3. By policy makers and legislators
    4. By parents, child development specialists, and educators (intervention agents)
    5. Training researchers

C. Influence and participation of local community (parents, schools, and community agencies, groups and institutions) in development and use of TV for children - effects on community

D. Research organizations - individual or institution

E. Research funding

F. Regulations and standards

G. Structure and operation of the broadcast industry - public vs. commercial broadcasting

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10. Proposal for a Center for Research in Children's Television. Gerald S. Lesser, Harvard University, 1971

11. Television and the Behavior of Preschool Children, Harold W. Stevenson, University of Minnesota, 1971

12. Testimony of Frederick C. Green, Office of Child Development, before the Federal Trade Commission, November 12, 1971, DHEW

13. The Wired Nation, The Nation, May 18, 1970, p. 582-604

CHAPTER III

STATE-OF-THE-ART IN COMPLETED RESEARCH - (Selected Documents)

FEDERAL AND NON-FEDERAL

State-of-the-Art Documents Reviewed

Five major reviews of completed research were analyzed for this section. For each document, its purpose and content are described, the research findings summarized and the significance of the findings for future research indicated. The documents reviewed include the following:

1. Television and Social Behavior: An Annotated Bibliography of Research Focusing on Television's Impact on Children, Public Health Service, National Institute of Mental Health, National Clearinghouse on Mental Health Information, 1971

2. Television and Growing Up: The Impact of Televised Violence, Report to the Surgeon General, U.S. Public Health Service, The Surgeon General's Scientific Advisory Committee on Television and Social Behavior, Washington: Government Printing Office, January, 1972

3. Television and the Behavior of Preschool Children, Harold W. Stevenson, University of Minnesota, 1971

4. Learning From Television: What the Research Says, Godwin C. Chu and Wilbur Schramm, National Association of Educational Broadcasters, Washington, 1967

5. A Summary of the Major Findings in the Second Year of Sesame Street: A Continuing Evaluation, Bogatz and Ball, 1971

(The results of the Appalachian preschool education program are included also.)

1. Television and Social Behavior
An Annotated Bibliography of Research Focusing on Television's Impact on Children

The Annotated Bibliography is the by-product of a research program on television and social behavior initiated in 1969, under the guidance of the Surgeon General's Scientific Advisory Committee on Television and Social Behavior. It represents a complementary effort to update information on prior research in the area of television and social behavior. The listing includes 300 annotated (those reviewed here) and 250 unannotated citations.

Incorporated in the Bibliography are previous reviews of the literature, such as Greenberg and Tannenbaum's (1968) review of mass communication research, Schramm's (1964) compilation of references for the UNESCO bibliography on mass media, and Weiss's analysis of the effects of the mass media. In addition, the standard sources such as Psychological Abstracts, Sociological Abstracts, Current Contents, and Annual Review articles were used in conjunction with the National Clearinghouse for Mental Health Information and the National Library of Medicine (MEDLARS) literature retrieval services to obtain the initial bibliographic listing.

The search of the literature, begun in October 1969 and completed in January 1971, represents as closely as possible a careful coverage of material in the major journals.

Citations are provided only for books and research papers, while articles appearing in newspapers and other popular journals are not included. Moreover, the bibliography stresses research on the impact of television and other visual media on the behavior and development of children, since this area is of major interest to the Surgeon General's Scientific Advisory Committee on Television and Social Behavior. In addition, although one of the major topic areas of this review is the relationship between televised violence and the aggressive behavior of viewers, there has been no attempt to survey the literature relevant to violence or aggression per se. Finally, we have restricted the scope of our review to the entertainment/informational aspects of television and have not dealt with the vast literature pertaining to educational television.

For the present report, the 300 annotated research projects reviewed in the Bibliography were analyzed according to the major research issues described in Chapter II. The research results of the 300 studies have been summarized and what these results have to say in terms of research gaps and needs is also presented here.

Summary of Research Issues

As a group, the 300 studies in television and social behavior reported in the Annotated Bibliography can be characterized as follows: they are frequently inconclusive in results, piecemeal in approach, narrow in scope and limited in the range of topics covered. The research reviewed was concentrated on the developmental processes, (cognitive, social-emotional and physical development, including learning) and in some of the areas covered under the topic Viewing Habits. These areas were amount of viewing, the effect of viewing on other activities, the control of viewing, and what audiences watch what programs.

With regard to the developmental processes, perhaps the most outstanding result was the focus in social-emotional development on the effect of viewing violence on aggressive behavior - and the neglect of other social-emotional effects.

With regard to other topics indicated in the second chapter as areas of significance in television research, this large group of studies had a relatively generous amount of activity in content analysis, but very little in the variables involved in effective programming or presentation of material (pacing, animation, use of color, etc.). The same is true of other major topics of research. For example, there has been comparatively little attention in completed television research in the areas included in Development, Transmittal and Technical Problems, Application, Research Process and Social Need. A possible explanation for the dearth of research in these areas in the past, and the greater concentration on topics which could be dealt with in a narrower manner in the research laboratory, may come from two related phenomena of recent years - technological advances in the television industry and the increased need and demand for better educational and social services, which may be met by more effective applications of that improved technology. The topics of more recent and proposed TV research, reviewed elsewhere in this report, reflect the operation of these latter developments.

Summary of Results*

TV and Child Development

Reasons for Watching TV

Reasons mentioned for watching TV by adults, teenagers, and children include relieving boredom and loneliness, gaining relaxation and relief from pressures and problems, stimulating emotions, and obtaining information about the world and information which can be applied to their own lives.

Cognitive Effects and Learning

It is often claimed that young children have difficulty distinguishing between media fantasy and reality. However, the evidence to back up this claim appears to be very scant. There is a little more evidence to indicate that children, teenagers, and even adults tend to accept what they see portrayed on TV or in films as accurate information or as true-to-life depictions.

Two studies point to a limited ability of young children to comprehend the overall story plot of films. The younger children respond to separate items in the film but they could not grasp the interpersonal relationships involved.

Preschoolers and young school age children have been shown to recall only a very limited amount upon one viewing of a film or TV program. One researcher also found that preschool age children learned to read barely any of the words which are frequently shown and spoken concurrently in TV commercials.

Social-Emotional Effects

Predictions about the social-emotional effects of TV have been predominately negative in nature. It has been forecast that TV would lead to passivity, dependence, increased anxiety, increased aggression, withdrawal and introversion, a sense of being cheated because life is not as exciting as the TV world, the inhibiting of personal relations, loss of emotional spontaneity, blunting and destruction of sensibilities, devaluation of human life, standardization of experiences and values, a conception of love as being primarily physical attraction, and an idealization of luxury.

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* This summary also contains results included within the following topics that were reported in Harold Stevenson's research review, Television and the Behavior of Preschool Children. Stevenson's report is covered in detail in a following section.

Investigation of the actual social-emotional effects of TV has focused primarily upon whether viewing violence increases aggressive behavior. The strikingly small amount of evidence on other possible social-emotional effects of TV indicates the following: film and TV viewing can produce fright and bad dreams in children and teenagers; interest and initiative in activities other than TV viewing may decline; emotional sensitivity may be blunted; and acceptance of war, violence, and dishonesty as permissible tactics may be increased.

Laboratory studies have quite consistently shown that children learn aggressive responses from viewing aggression. The children's actual performance of observed aggressive behavior is more likely if the aggressive model was rewarded or suffered no consequences than if the model was punished. One study demonstrated considerable retention of learned aggressive behavior over a period of 6 months. In these laboratory experiments the stimuli in the film and in the laboratory where the children were tested were greatly similar. The extent to which this similarity between situations affects the amount of imitated aggression is an open question. In most of these studies the aggression witnessed and displayed was directed at toys rather than at people. A small amount of evidence suggests that aggressive behavior is imitated less by children when the potential victim is a person rather than a toy. However, laboratory studies with college students have shown that viewing films of aggressive behavior can lead to an increase in aggression directed toward people. In these studies the likelihood of acting aggressively was greater if the students were frustrated or angered before viewing the filmed aggression, if the aggression viewed was justified, and if aggression-eliciting cues were associated with the potential victim.

From the laboratory studies of aggression and from collection of data in natural settings it is generally concluded that witnessing aggression 1) does not result in the cathartic draining of aggressive impulses but, if anything, stimulates them and 2) is likely to result in delinquent behavior only in those who were already maladjusted and delinquency prone.

In addition to the material indicating that aggressive models may increase the learning and/or performance of aggressive behavior, there is a small amount of material showing that observation of gruesome outcomes of aggression or of models displaying constructive behavior may reduce the liklihood of aggression or increase the likelihood of constructive behavior.

Physical Effects

Research has shown no undesirable effects of TV on health or on eyesight in particular

Content, Programming and Presentation

Content Analysis

There tend to be few national programs for children, and local programs for children tend to be of poor quality. There have been especially few programs for preschool age children. Children of all ages spend a good deal of time viewing programs designed for more mature audiences.

No matter what age group programs have been designed for, a great deal of violence is shown. Studies done during the 1950's and early 1960's showed that there was more violence in programs designed for children than in those designed for adults. Content analysis of TV programs has indicated that a frequent theme is the triumph of good over bad through violence, with forces of the law often acting violently and deceptively. Unpleasant physical consequences of violence are rarely shown. Violence on TV often goes unpunished. TV violence is typically committed by an unmarried young or middle aged male. Foreigners and nonwhites commit more TV violence than white Americans.

Content analysis has shown that TV programs feature mainly upper and middle class characters; accord more respect to members of European immigrant groups than to members of other minority classes; portray occupations in stereotyped ways; and focus on atypical, dramatic, or deviant aspects of many occupations.

Presentation

A very scant number of references reported on the effects of program features other than content. One reference reported finding differences in the distribution of audience attention and in emotional reactions between color and black and white TV viewing. Two studies reported differences in the impact of an event between the conditioning of viewing the event on TV and witnessing it in person.

Development of Programs and Equipment

Collaborative Development

A few studies suggest that, in connection with the goal of upgrading programming, children and program production people could each offer help to the other. Two studies found that children and TV production people have different concepts of quality and structure in children's programs. These findings suggest that consultation by TV production people with children about children's program tastes might result in better programming for children

Application

Follow-up or Supplementation

Very little information was presented concerning the influence of the TV viewing situation on TV's impact. There is some indication that children's learning from TV is increased if someone talks with the children about the program or if the program is supplemented by other educational activities. It was also found that children are most likely to believe that TV depictions are true to life when no other sources of information are available. One reference reported finding that children became more frightened by TV programs when viewing TV alone or with other children their own age than under other viewing conditions.

Viewing Habits

Amount of Viewing

Three American studies reported that teenagers view less TV than those who are younger, while two other American studies reported the reverse. It has generally been found that children and adults within higher socioeconomic levels watch TV less than those in lower socioeconomic levels. Within the lower income level, it has been found that black grade school children and black teenagers watch more TV than white children of the same ages. Three studies reported finding that children of higher intelligence watch less TV than those of lower intelligence. However, three other references reported the opposite finding. Average viewing amounts cited for children generally are about 2 to 4 hours per day. Two 1969 studies reported viewing amounts for low income black children of about 6 hours per day.

Non-Viewing Activities in Relation to TV Viewing

Studies in various countries generally, though not always unanimously, found TV viewing to have caused a reduction in radio listening, movie attendance, comic book reading, children's social activities with their peers, and the reading of books. However, TV is reported as stimulating reading in some cases. Children's playtime and helping with household chores were consistently, though infrequently, mentioned as being reduced in favor of TV viewing.

Guidance and Control of TV Viewing

Some investigators reported that American parents exercise control over their children's TV viewing in less than half of the homes sampled, while other investigators reported higher amounts of American parental control. There are some reports stating that children's TV viewing is controlled less in lower class homes than in upper class homes, but others reported finding no difference in amount of parental control between different socioeconomic levels.

Investigators also have reported on various characteristics of parental control. One study found that children controlled the TV dial in the late afternoon while the family as a unit controlled it in the evening. Lower class parents have been found to more often use TV controls as reward or punishment than higher class parents. Actively intervening by turning off the set or changing channels was found at all socioeconomic levels, but higher class parents were found to also try distracting or reasoning with their children as a means of control. It was also found that higher class parents more often suggest programs or allow viewing of "special" or "worthwhile" programs than do lower class parents.

Who Watches What

Children below the teen level are cited as preferring Westerns, thriller dramas, cartoons and other types of children's programs. Adolescents' viewing habits were generally found to be similar to those of adults. Both preferred realistic stories over fantasy.

Parents were generally found to consider TV as offering a learning experience for their children. The most frequent parental complaint against TV was the violence shown. In one reference it was noted that parents' concern about violence on TV seems to center on fear of imitation by children rather than on moral or psychological considerations.

Investigators have found that programs featuring action and aggression are preferred more by boys than by girls, by teens than by adults, and by delinquents than by nondelinquents. It appears that fantasy-oriented content is preferred more than usual by adults who are high in anxiety and low in social status, and by children who need immediate reward or experience disparity between their aspirations and those of their peers or parents.

Differences have been found between program preferences of blacks and whites. More agreement was found between black and white adults on what was bad on TV than on what was good. There was more consensus among black fourth and fifth graders concerning program favorites than among white children of the same grade level. One investigator found that black children had a strong preference for shows in which the central character was without a mate.

Research Process

Three major approaches have been used to study the impact of TV — laboratory studies, research in naturalistic settings, and survey research. There are serious methodological problems with each of these approaches. The results of laboratory studies may be inapplicable to everyday situations. Research in naturalistic settings and survey research often identify only which features are associated with each other rather than causal relationships. Research in natural settings often does not allow adequate control over variables which may have a major impact on results. Survey research frequently relies upon people's replies to questionnaires. Such replies,especially those from children, are often inaccurate and/or incomplete.

The vast number of variables relevant to the impact of TV contribute to the problems and difficultues of research in this area. Characteristics of the TV audience, of their surrounding environment and lifestyle, and of the TV message and media are all relevant to the impact of TV. The amount of exposure to TV and the length of time since such exposure are additional important variables.

The scope and depth of coverage of these variables has been quite limited up to now.

The results of research on the impact of TV should be regarded with the above difficulties and limitations of the research in mind.

Research and Policy

Regulations and Standards

One study indicated that children will watch and enjoy "good" programs when there is no other choice. This suggests that the TV industry might upgrade children's taste by the industry's program selection and scheduling.

One authority pointed out that some problems are fundamentally questions of conviction and taste and cannot be settled by research. Nevertheless, research on the decision-making and program production processes of the TV industry could make a contribution to changing the characteristics of TV programming. Such research was recommended in several references. Further research on the impact of TV, which was called for by many investigators, could contribute valuable information to writers, broadcasters, and parents.

2. Television and Growing Up: The Impact of Televised Violence

The research reported in this work is a result of two years of effort. In 1969 a distinguished group of behavioral scientists was appointed by the Surgeon General, the advisory group thereafter known as the Surgeon General's Scientific Advisory Committee on Television and Social Behavior, at the request of the Chairman of the Senate Subcommittee on Communications, John O. Pastore. The committee's task assigned by the Surgeon General was to study the effects of televised violence:

> Their task will be to review what is presently known, and to design and to recommend the long-range research studies which will help answer the specific questions now under discussion. The Panel members will be knowledgeable about television and violence, and of equal importance, experts in such related areas as social psychology, communication and learning, and the etiology of emotional disturbance.*

To accomplish part of the assigned task "to review what is presently known", the committee produced the Annotated Bibliography which has been discussed above. For the rest of the task, one million dollars was made available for the support of new research, and a secretariat, the Television and Social Behavior Program, was organized within the National Institute of Mental Health to provide staff support for the work of the Advisory Committee.

The staff secretariat took major responsibility for finding competent investigators who were willing to undertake pertinent research within the time constraints. The staff also was responsible for selecting those proposals which seemed most likely to provide significant data and for monitoring the studies until their completion.

Twenty-three independent projects were funded which provided a multidimensional approach to the assessment of television's effects. These 23 projects -- many of which involved more than one study and sometimes more than one report -- and a number of specially commissioned papers form much of the basis for reported inferences and conclusions. (For a brief description of all reports and papers, see Appendix A).

Although the projects vary widely in subject, scope, and approach, there were similarities among them in many instances, and the program staff and the investigators attempted to link them so that they could provide a coherent set of findings. This was done at both the investigation and interpretation levels and resulted in the review and interpretation, as a group of sets of studies with common features, and in the investigators' sharing of ideas, methods, measures, and in one instance, experimental subjects. The reports and papers were divided into five groups according to their common concerns and their theoretical and empirical orientations.

Technical reports will be published for each of these groups. These with the summary report and a revision of the Annotated Bibliography will represent the total printed output of the work of the committee.

Summary of Research Results and Research Issues

Because of time limitations and the late date at which this document was received, we will not attempt to make a detailed analysis of the reported results of research studying the impact of violence. Rather we will quote rather lengthy passages from Chapter 1 in which the results are concisely summarized and from Chapter 8 wherein the topics needing further investigation are presented in a broad perspective of future research needs.

General Implications

The best predictor of later aggressive tendencies in some studies is the existence of earlier aggressive tendencies, whose origins may lie in family and other environmental influences. Patterns of communication within the family and patterns of punishment of young children seem to relate in ways that are as yet poorly understood both to television viewing and to aggressive behavior. The possible role of mass media in very early acquisition of aggressive tendencies remains unknown. Future research should concentrate on the impact of media material on very young children.

As we have noted, the data, while not wholly consistent or conclusive, do indicate that a modest relationship exists between the viewing of violence and aggressive behavior. The correlational evidence from surveys is amenable to either of two interpretations: that the viewing of violence causes aggressive behavior, or that both the viewing and the aggression are joint products of some other common source. Several findings of survey studies can be cited to sustain the hypothesis that viewing of violent television has a causal relation to aggressive behavior, though neither individually nor collectively are the findings conclusive. They could also be explained by operation of a "third variable" related to preexisting conditions.

The experimental studies provide some additional evidence bearing on this issue. Those studies contain indications that, under certain limited conditions, television viewing may lead to an increase in aggressive behavior. The evidence is clearest in highly controlled laboratory studies and considerably weaker in studies conducted under more natural conditions. Although some questions have been raised as to whether the behavior observed in the laboratory studies can be called "aggressive" in the consensual sense of the term, the studies point to two mechanisms by which children might be led from watching television to aggressive behavior:

the mechanism of imitation, which is well established as part of the behavioral repertoire of children in general; and the mechanism of incitement, which may apply only to those children who are predisposed to be susceptible to this influence. There is some evidence that incitement may follow nonviolent as well as violent materials, and that this incitement may lead to either prosocial or aggressive behavior, as determined by the opportunities offered in the experiment. However, the fact that some children behave more aggressively in experiments after seeing violent films is well established.

The experimental evidence does not suffer from the ambiguities that characterize the correlational data with regard to third variables, since children in the experiments are assigned in ways that attempt to control such variables. The experimental findings are weak in various other ways and not wholly consistent from one study to another. Nevertheless, they provide suggestive evidence in favor of the interpretation that viewing violence on television is conducive to an increase in aggressive behavior, although it must be emphasized that the causal sequence is very likely applicable only to some children who are predisposed in this direction.

Focus on the Future

The research reviewed here has uniformly been sharply focused on exposure to televised violence on the one hand, and on aggressive tendencies on the other. The narrowness of this focus is not surprising. but exposure of televised violence does not exist in a vacuum. The narrowness of concentration in these studies has severely hampered the interpretation of results. Some of the most important questions that this committee would like to answer are relegated the the realm of future research.

The research to date has whetted rather than satisfied our desire to increase our understanding of the complex psychological and social influences leading to antisocial tendencies. On the basis of the findings we have reviewed in this report, we recommend that future research concentrate in the following areas:

(1) Television in the context of other mass media. It is reasonable to expect that there is a positive relationship between an individual's use of television and his use of other mass media. As indicated earlier, when a stimulus exists in a constellation of highly related stimuli, any member of the constellation can, if studied in isolation, receive credit for the responses evoked by the entire constellation. So far, the attempts to isolate exposure to television have resulted in possible confounding of attribution.

(2) Mass media in the context of the total environment, particularly the home environment. If the analogy is not too far-fetched, we would recall that "high fever" is seldom if ever listed as a cause of death; yet if high fever were studied in the same isolated way that exposure to television has been studied, we might reach some startling conclusions. The importance of developmental history and social environmental context is emphasized in the testimony of Federal Communications Commission Chairman Dean Burch before the Subcommittee on Communications of the Senate Commerce Committee. On September 28, 1971, Chairman Burch posed the question: "To what extent does what the young viewer brings to the TV screen determine what he carries away -- which is another way of asking where the television ranks among all the other aspects of a child's environment?"

Indeed, the studies reviewed in Chapter 6 suggest several specific directions for further exploring the relationship between television and aggression. First, identify the predispositional characteristics of those subgroups of children who display an increase in aggressive behavior in response to televised violence. Second, ascertain at what ages different reactions occur. Third, check on the moderating influence of labeling, contextual cues, and other factors under the control of television producers which may reduce the liklihood that predisposed children will react adversely to televised violence. Fourth, further investigate the possibility that content other than violence content may increase the likelihood of subsequent aggressiveness, the possibility that violent content may instigate other behavior besides aggressiveness, and the applicability of such findings to preschool children, youngsters, and adolescents. Finally, we must call attention once again to the gap in longitudinal research on the effects of television programs on children. This gap needs to be filled before we can learn something dependable about the long-term effects of repeated exposure to standard television fare on the personality development of the child.

(3) Functional and dysfunctional aggressive behavior. The lines which separate violence, hostility, aggression, and vigorous competition tend to become blurred in studies of the kind we have reviewed. Certainly, our society does not assign negative value to all these concepts; although traditional sex roles may be breaking down, there are few boys who are taught to "stand up for your rights and defend yourself". These are those who argue that the realities of life require a certain set or readiness for aggressive behavior. The

study of values, mores, and the realities of adaptation in this area would provide an important backdrop for our interest in media effects.

(4) Modeling and imitation of prosocial behavior. In our concentration on potential antisocial effects, we have seriously neglected any balancing effect that may occur. Perhaps this question ought to be more broadly stated as a cost-benefit problem, involving a balance between potential damage and potential benefit. In the current trend toward rejection of alleged overpermissiveness, are we risking a swing of the pendulum all the way to overprotection and overmanipulation? To state this position another way: we want children to climb trees, even though it would be easy to prove that tree climbing causes broken legs.

(5) Teaching and learning of values about violence. We have noted and deplored the paucity of research about the manner in which values with respect to many areas of behavior, including violence, are transmitted, and about the role played by television and other mass media in this communication. In the long run, societal values are shaped by a great variety of environmental fòrces and institutions; television programs may contribute a great deal or only a small amount to the process. It is conceivable that prolonged exposure of large populations to television violence may have very little immediate effect on the crime rate, but that such exposure may interact with other influnces in the society to produce increased casualness about violance which permits citizens to regard with increased indifference actual suffering in their own or other societies, and to reflect that indifference in major political and economic decisions. Research may indicate that such fears are unfounded, but the research needs to be done.

(6) Symbolic functions of violent conflict in fiction. The experiance of humanistic scholars suggests that, for adults at least, violent content in fiction is sometimes a vehicle for presenting to a general audience "messages" about important social and cultural issues. The authors and producers need not be fully aware that they are doing this. The Oedipus plays are perhaps the best-known example from the humanities. They have widely been held to be not merely "violence on stage," but also powerful statements in a symbolic medium about pervasive psychological or cultural conflicts. To suppose that plays about the tragic life of King Oedipus were significant to the early Greeks merely because people liked stories about violence would be simplistic. It would likewise be far-fetched to accuse the Greek theater of inciting Green warriers to repeat

assults on Troy by exposing them to episodes of meaningless violence.

There is a considerable body of literature on the symbolic meanings of primitive (and not-so-primitive) myths and legends, which often are extremely violent. Anthropological literature supports the contention that, whatever else it may do, such folk literature communicates convantional social values and moral standards, and also provides folk interpretation of the pervasive conflicts and problems of life in a given society at a particular point in its history. It would be desirable to look upon television drama and cartoon programs--crude as they may be--as folk literature in this sense. It would be important,in order more fully to understand the role of television in American life, to investigate the latent symbolic "messages" that even violent television plays and cartoons may convey over and above the content of individual scenes.

These are but a few examples of the kinds of research that have been discussed at meetings of the Adivisory Committee; for the good reasons described earlier, little attention has been paid thus far to the contextual, developmental, and societal variables. It is our sincere hope that, as pertinent research continues, these more fundamental questions will be attacked.

Thus, while the report of the Surgeon General's Advisory Committee was particularly concerned with the effects of televised violence on the tendencies of children toward aggressive behavior, it set its investigations within a much larger context. And while the majority of the research supported and developed fell within a single area representing only one topic in our outline of research issues -- that of social-emotional development - other research issues and questions included in our outline were studied as well.

Results reported in research areas such as television's impact on childhood, why people watch television, young viewers and their parents and, in particular, the topic Some Problems of Research on the Impact of Television (all of Chapter 3) may need further study by the Interagency Panel. Other topics included in our outline of research issues and questions that are reviewed in the Surgeon General's report fall in the topics Viewing Habits, Content and Presentation, and Methodology.

Other Research Issues

In the planning of the research to investigate the impact of television on children, the committee avoided the pitfall of supporting unrelated piecemeal research. Rather they sought out and eventually funded "a series of individual studies which would address a variety of related questions and which would provide an interrelated set of findings." In this way a step was made away from the direction of the funding of individual projects whose findings are difficult if not impossible to fit into a developing body of scientific knowledge - a limitation characteristic of much past completed research.

Another outstanding characteristic of this study is that the review and advisory committee represented a cross section of professions and disciplines. This had two salutary effects - an example has been set of successful interdisciplinary collaboration and agreement over a wide range of viewpoints and the study has benefitted from the various approaches, insights, and skills represented. More such collaborative planning and review of research is needed.

However in order to make the most of such multidisciplinary effort the committee strongly suggest that sufficient understanding and time be allowed for the committee process to operate in the best way. Time is needed prior to research planning for exploration of other members viewpoints to help set goals, and after the research is completed time is needed to thrash out complex and controversial material. Such "deliberation inevitably generates useful ideas which reflect the varied insights and skills of the several disciplines...the necessary time for such a process has rarely been available to committees concerned with important public issues."

But in spite of the decried lack of time, this report is filled with thoughtful observations on research planning and the formulation of research questions, as well as discussions of the results of the studies on violence. This project represents one of the best examples of the completed research we have reviewed of the application of a number of the areas in the research process included in our outline of research areas (i.e., planning, evaluation, methodology). For these reasons, we recommend this report for further Panel study.

3. Television and the Behavior of Preschool Children

The state-of-the-art review, Television and the Behavior of Preschool Children, included generally the same topics as those of the much more extensive Annotated Bibliography prepared to supplement the Surgeon General's report on TV and social behavior. The smaller report reviewed approximately 30 recent research references, while the Bibliography included 300 annotated and 250 unannotated references. The results of both reports are summarized in the section reviewing the Bibliography.

Summary of Research Issues

What will be discussed here are the major recommendations for needed research, either stated or implied in the Stevenson study. One of the most obvious conclusions is the need for more and better quality research on programs for preschool children. "Reviews of research on television and social behavior contain relatively few studies using preschool children as subjects.....as a consequence, much of what can be said must be in the form of inference and conjecture." Better quality research must depend upon improved research methodology. Each of the three major approaches to research in this area - laboratory studies, research in naturalistic situations and survey research - pose serious methodological problems. "As we begin to impose the controls necessary for unambiguous conclusions we move away from natural conditions of viewing and thereby restrict the number of generalizations that can be made from our data. As we begin to approximate natural conditions of viewing we lose control of variables that may play an important role in determining our results." While not dealing directly with the problems associated with any of these three methods, Stevenson does point out the importance of the planning of series of studies to allow combination and continuity for more conclusive results. And conclusive results with regard to long term effects is one of his major concerns.

Stevenson points out also that the fairly large body of available scientific knowledge about child development needs to be applied in the creation and production of programs for children. For example, research is needed on the learning and retention effects of instructional materials that elicit frequent active responding, repeat specific content frequently, use simple language, supplement verbal instructions and explanations with concrete examples, make salient the aspects of the situation to which the child is to respond and clarify for the child what is real and what is imaginary. Findings such as these from developmental research may be used as guidelines for developing programs for young children.

Stevenson is also especially interested in research on the role of the home, family and parent in making TV effective for children and also in research which concentrates more on the beneficial results of children's TV viewing.

As a final important recommendation, the reviewer suggests we especially need research to determine the kinds of experiences that are most likely to be useful to the greatest number of children of particular ages, backgrounds and abilities - and then to remember that research results must be viewed with the understanding that individual differences among preschool children are pervasive and that generalizations about the effect of television viewing experiences will not be equally valid for all children.

But, "as is so often the case in investigating phenomena of the realworld, we probably never will obtain information that is as satisfactory as we would desire. Nevertheless, it is only through research that we will be able to make statements on the basis of what we *know* rather than on the basis of what we may *believe*, or worse, what we wish to believe."

The reviewers of the Sesame Street programs and the Appalachian Preschool program, reported by Stevenson, are covered in detail elsewhere in this report.

4. Learning From Television: What the Research Says

In 1967 under contract with the Office of Education, Chu and Schramm published Learning From Television: What the Research Says, a review of the research literature that covered about 300 references dealing with instructional television. The focus is on the instructional effects of TV for all children - not only for preschool or very young children, the major concern of the Interagency Panel. The literature search depended partly on abstracts, partly on complete documents, and included foreign as well as U.S. research.

Summary of Research Issues

The six organizing areas for the report are (1) How much pupils learn from instructional television, (2) Efficient use of the medium in a school system, (3) Treatment, situation, and pupil variables, (4) Attitudes toward instructional television, (5) Television in developing regions, (6) Learning from television compared with learning from other media. It is concluded from overwhelming evidence that television can be an efficient tool of learning and teaching. When it is not efficient, the reason is usually in the way it is used. Evidence favors the integration of television into other instruction, simplicity rather than "fanciness", emphasis on the basic requirements of good teaching, introduction of the medium so as to minimize resistance, and testing and revision of programs. Whether the television medium is to be preferred, and whether it is feasible for developing regions, depends on objectives and conditions.

By far the largest amount of research was reported in the section on treatment, situation and pupil variables. These are areas which correspond most closely with those covered in the topic Content, Programming and Presentation of our research issues outline. Thus the two most extensive TV research reviews (the Annotated Bibliography and Chu and Schramm) appear to indicate that most of the completed research has been in Developmental Processes, Viewing Habits, and Content and Presentation. Lesser amounts of research and less impressive results in the other five topics of Chu and Schramm (except the first) suggest that more research needs to be done on attitudes, acceptance and utilization of TV instruction, and on the proper mix of TV with other instructional media.

Perhaps the most interesting result of this report that bears on our attempt to identify major research issues is the indication that some of its conclusions may be somewhat outdated, even though the report is less than five years old. For example, the "ready" state of cable television and the capability it offers for two-way communication has increased the potential use of television as an instructional medium in the past five years. An examination of the other conclusions of this report that appear below in the Summary of Results, suggest the differences in current appraisal of the value of instructional TV, due perhaps to rapid technological advances and increasing demands for school innovation.

The results are summarized as 60 propositions falling within the six organizing areas, and these are listed below. Evidence for each proposition was briefly summarized in the literature review.

Summary of Results

A. Do Pupils Learn From Television?

1. Given favorable conditions, children learn efficiently from instructional television.

2. By and large, instructional television can more easily be used effectively for primary and secondary school students than for college students.

3. So far as we can tell from present evidence, television can be used efficiently to teach any subject matter where one-way communication will contribute to learning.

B. What Have We Learned About the Efficient Use of Instructional Television in a School System?

4. Television is most effective as a tool for learning when used in a suitable context of learning activities at the receiving end.

5. Television is more likely to be an efficient part of an educational system when it is applied to an educational problem of sufficient magnitude to call forth broad support.

6. Television is more likely to be an efficient tool of learning if it is planned and organized efficiently.

C. What Have We Learned About the Treatment, Situation and Pupil Variables?

7. There is no evidence to suggest that either visual magnification or large-size screen will improve learning from television in general.

8. There is insufficient evidence to suggest that color will improve learning from film or television.

9. Where learning of perceptual-motor skills is required, a subjective angle presentation on television will tend to be more effective than an objective angle presentation.

10. There is no clear evidence on the kind of variations in production techniques that significantly contribute to learning from instructional television. However, students will learn better when the visuals are presented in a continuous order and carefully planned both by the television team and the studio teacher.

11. Attention-gaining cues that are irrelevant to the subject matter will most probably have a negative effect on learning from instructional television.

12. There is no consistent evidence to suggest that either humor or animation significantly contributes to learning from instructional television.

13. Subtitles tend to improve learning from instructional television, particularly when the original program is not well organized.

14. There is insufficient evidence to suggest that dramatic presentation will result in more learning than will expository presentation in instructional television.

15. Inserting questions in a television program does not seem to improve learning, but giving the students a rest pause does.

16. Whether a television program is used to begin or to end a daily lesson by the classroom teacher makes no difference in learning.

17. Repeated showings of a television program will result in more learning, up to a point, but teacher-directed follow-up where available, is more effective than a second showing of the same program.

18. If saving time is important, a television program can probably be shortened and still achieve the minimum requirements of teaching.

19. There is no clear evidence to suggest whether eye-contact in television instruction will affect the amount of learning.

20. Problem-solving instruction on television is more effective than lecturing where the materials taught involve the solving of a problem.

21. The students are likely to acquire the same amount of learning from instructional television whether the materials are presented as a lecture, or in an interview, or in a panel discussion.

22. Where accurate perception of images is an important part of learning, wide viewing angle and long distance will interfere with learning from instructional television.

23. Adequate attention provided by the classroom teacher will, in most cases at least, remedy the adverse effect due to a wide viewing angle.

24. Noise will reduce the effectiveness of learning from film and television as far as part of the learning comes from the auditory medium.

25. Instructional television appears to be equally effective with small and large viewing groups.

26. Instructional television may or may not be more effective with homogeneously grouped students, depending on other factors in the learning situation.

27. Whether instructional television can teach students who view at home as effectively as students in the classroom seems to depend on other conditions.

28. At the college level, permissive attendance does not seem, by itself, to reduce the effectiveness of instructional television.

29. Students will learn more from instructional television under motivated conditions than under unmotivated conditions.

30. Learning from television by the students does not seem necessarily to be handicapped by the lack of prompt feedback to the instructor.

31. Showing, testing, revising an instructional television program will help substitute for lack of live feedback to the teacher, and make for more learning by the students.

32. The lack of opportunity for students to raise questions and participate in free discussion would seem to reduce the effectiveness of learning from instructional television, particularly if the students are fairly advanced or the material is relatively complicated.

33. If a student being taught by instructional television can be given immediate knowledge of whether he has responded correctly, he will learn more.

34. Students taught by television tend to miss the personal teacher-student contact, but there is insufficient evidence to suggest that the lack of such contact will impair learning from instructional television.

35. Practice, whether by overt or covert response, will improve learning from instructional television if the practice is appropriate to the learning task, and if the practice does not constitute an interference.

36. Note-taking while viewing instructional television is likely to interfere with learning if time for it is not provided in the telecast.

D. Attitudes Toward Instructional Television

37. Teachers and pupils are more favorable toward the use of instructional television in elementary school than in secondary school and college.

38. Administrators are more likely to be favorable toward instructional television than are teachers.

39. Voluntary home students of televised college classes tend to be more favorable toward learning by television than are the students who take these same televised courses in the classroom.

40. At the college level, students tend to prefer small discussion classes to television classes, television classes to large lecture classes.

41. There is evidence of a hawthorne effect among students beginning to use instructional television, but no firm evidence that attitudes toward the medium necessarily improve or worsen with time.

42. Favorable attitudes are distributed widely enough among different televised courses to cast doubt on the assumption that some academic subjects, per se, may be disliked as material for instructional television.

43. Liking instructional television is not always correlated with learning from it.

44. Among the factors that determine teacher's attitudes toward instructional television are (a) how they perceive the degree of threat to the classroom teacher; (b) how they estimate the likelihood of mechanized instruction replacing direct contact with students; (c) how they estimate the effectiveness of instructional television; (d) the difficulties they see in the way of using modern techniques; (e) how conservative they are, and whether they trust or distrust educational experimentation.

45. Among the factors that determine pupils' attitudes toward instructional television are (a) how much contact they think they will have with a teacher; (b) how they compare the relative abilities of the studio and classroom teachers; (c) whether they find instructional television boring or interesting; (d) the nature of the televised programs they have seen; (e) the conditions of viewing.

E. Learning From Television in Developing Regions

46. There is no evidence to lead us to believe that children learn any less efficiently from television in developing countries than elsewhere.

47. Under suitable conditions, television has been shown to be capable of highly motivating learning in developing regions.

48. Illiterate people need to learn certain pictorial conventions. There is some evidence suggesting that these conventions are not hard to learn.

49. When media are introduced for upgrading the level of instruction, then it has proved very important to train teachers in their proper use and to keep in close touch with them.

50. Resistance to television and other media is likely to be no less in developing countries, but the size and urgency of the problems are likely to provide greater incentive for overcoming it.

51. Feedback from the classroom teacher to the studio teacher will be helpful to effective use of the media.

52. There is ample evidence that the new media, particularly television, are effective for in-service training of teachers for developing regions.

F. Learning From Television: Learning From Other Media

53. Given favorable conditions, pupils can learn from any instructional media that are now available.

54. There appears to be little if any difference between learning from television and learning from film, if the two media are used the same way.

55. Television and radio have certain advantages over films in flexibility and deliverability.

56. Radio is less expensive than television; economy of scale usually governs cost comparisons of television and films.

57. More complete control of film by the classroom teacher gives it a potential advantage over television.

58. The use of visual images will improve learning of manual tasks, as well as other learning where visual images can facilitate the association process. Otherwise, visual images may cause distraction and interfere with learning.

59. There is some evidence to suggest that moving visual images will improve learning if the continuity of action is an essential part of the learning task.

60. Student response is effectively controlled by programmed methods, regardless of the instructional medium.

5. Results of Two Years of Sesame Street

In October 1970, the evaluation of the first year of Sesame Street was completed by Educational Testing Service. The study found the program successful in reaching many of its stated goals but it was recognized additional evaluation would be needed to indicate, particularly, the long term effectiveness of the program. The differences in focus of the two studies are shown in the following statement of major research questions for the two years.

Sample of 1969-70 research questions:

What, overall, is the impact of Sesame Street?
What are the moderating effects of age, sex, prior achievement level, and socioeconomic status (SES) on the impact of Sesame Street?
Do children at home watching Sesame Street benefit in comparison with children at home who do not watch it?
Do children in preschool classrooms benefit from watching Sesame Street as part of their school curriculum?
Do children from Spanish-speaking homes benefit from Sesame Street?
What are the effects of home background conditions on the impact of Sesame Street?

Sample of 1970-71 research questions:

Were the objectives of the second year of programming, including new and revised goals, achieved?
What effects did the program have on disadvantaged first-year viewers who started formal schooling during the show's second year?
What are the effects on disadvantaged first-year viewers who continued to watch second-year programs from their homes?
What are the most definitive details of the programs impact on Spanish-speaking children?
What are additional moderating effects of race, sex, socioeconomic level, and age in the achievement of viewers?

A brief summary of the first year findings include the following:

1. Sesame Street showed that television can be an effective medium for teaching 3-to-5-year-old children important simple facts and skills, such as recognizing and labeling letters and numerals, and more complex higher cognitive skills, such as classifying and sorting by a variety of criteria.

2. Children who watched the most learned the most.

3. The skills that received the most time and attention on the program itself were, with rare exception, the skills that were best learned.

4. The program did not require formal teacher supervision in order for children to learn in the areas the program covers. This finding has special significance in light of the fact that more than four-fifths of all children 3 and 4 years of age do not attend any kind of school, and more than a quarter of all 5-year-olds do not.

5. The major finding -- that children learned more the more they watch -- holds true across age, sex, geographical location, socioeconomic status (SES), mental age (intelligence), and whether children watched at home or at school.

6. 3-year-old children who viewed the show a great deal had higher attainments at post-test than those 4- and 5-year-olds who viewed the show less, even though the younger children scored lower at pre-test than the older children. This finding has important implications for education in general, for it suggests that 3-year-old children are able to learn many skills that have traditionally been introduced at later ages.

7. A similar phenomenon appeared with advantaged and disadvantaged children. Although the disadvantaged children started out with considerably lower achievement scores on the skills being taught, those who watched a great deal surpassed the middle class children who watched only a little.

8. An extremely provocative, although highly tentative, finding suggests that Sesame Street may be particularly effective for teaching some skills to children whose first language is not English and who do not test well or perform well in school. A very small sample of children from Spanish-speaking homes in the Southwest made more spectacular gains than any other subgroup of children.

9. Children who watched Sesame Street the most -- and hence learned the most -- tended to have mothers who often watched the show with them and often talked to them about it. In these same homes, the parents tended to have somewhat higher expectations for their children.

The second year evaluation of Sesame Street had two main parts: The New Study and the Follow-up Study. The New Study was intended as a replication of the first year and as a means of assessing the impact of the second year's extended and new goal areas. Part of the population of the New Study were assigned to groups encouraged by field staff to view the program, other groups were not so encouraged. The Follow-up Study was intended to evaluate the effects of a second year of viewing on children who viewed at home both years. The effects of the first year of viewing on the performance of children who entered school the second year has also been evaluated in the Follow-up Study.

Following are the highlights of the second year evaluation as they appear in the summary of the major findings: Bogatz and Ball, A Summary of the Major Findings in the Second Year of Sesame Street: A Continuing Evaluation.

Sesame Street, in a second and more ambitious 29-week season, continued to demonstrate the effectiveness of television as a medium for teaching preschool children.

The ETS study tended to support first-year findings that the program was effective in imparting basic facts and skills to children aged 3 to 5 and those who watched most learned most.

At the same time, re-analysis of first-year study data indicated that the program was as effective with Black disadvantaged children as with the white disadvantaged, that the disadvantaged among frequent viewers gained as much as did the advantaged, and that 3-year-olds among the most frequent viewers gained more and ended with higher total scores than did older children who viewed less frequently.

And, there were other new and significant findings:

READINESS FOR SCHOOL -- Teacher evaluations suggest that the more frequent viewers of first-year Sesame Street programs were better prepared for school than the infrequent viewers among their classmates. More importantly, no basis could be found for fears expressed by some observers that Sesame Street viewers, accustomed to a fast-paced entertaining television format, would be "turned off" by conventional classroom instruction when they started school.

TWO-YEAR IMPACT -- First-year viewers who watched at home during the second year gained in most of the new and complex goal areas added in the second year.

THE NEW VIEWERS -- Children who started watching during the second year gained significantly more in most goal areas than did non-viewing children. Gains were greatest in first-year goal areas and least in new goal areas.

ENCOURAGEMENT -- Encouragement of children to view the program, carried out by community people, was an important factor affecting the gains among viewers.

ATTITUDES -- Measures of attitudes, employed this year for the first time, showed gains in favorable attitudes toward school and toward people of other races among at-home viewers of both program series.

RESULTS BY AGE -- Overall gains among 3-, 4-, and 5-year-olds were about equal, indicating the show is having a positive effect at all of the age levels for which it was designed.

SIDE EFFECTS -- Gains in vocabulary, mental age, and IQ never have been objectives of Sesame Street. But the new research suggests that, as a side effect, the program may be having a positive impact in these areas or at least in viewers' performance on one of the standardized tests used with preschool children.

CHILDREN OF SPANISH BACKGROUND -- First-year research indicated dramatic gains for a small group of Spanish-background viewers. In the second year, a new sample of Spanish-background children was tested in an attempt to verify the first-year findings. The results of the new tests proved inconclusive because the attempt to maintain a control (non-viewing) group broke down when, for undetermined reasons, almost all children in the sample viewed the show.

Interpretation of these results should take several factors into account. First, in its second year the program continued to be experimental and many new goals exceeding the scope of those of the first year were introduced, in part to test the boundaries of the program's effectiveness with its audience. Because the expanded goals had to be worked into the 60-minute format of the program, proportionately less time could be spent on many goal areas, a fact that has implications for the interpretation of the year-two research results. Secondly, the year-two sample was limited to children who were heavily disadvantaged, even more so than those in the first-year disadvantaged sample. And third, the results reflect a conservative estimate of Sesame Street's effectiveness, since there were a few non-viewers among the encouraged or presumably viewing group and about 35 per cent of the control or presumably non-viewing group viewed in varying amounts. Without a pure viewer vs. non-viewer experimental control -- a difficult achievement, given the show's popularity and the impossibility of controlling the level of viewing -- the full extent of the impact of the show cannot be identified.

The detailed statement of instructional goals for the second season are included in the Appendix.

6. Results of the Appalachian Preschool Education Program

Results of the third year field test of the program of the Appalachian Educational Laboratory include the following:

For significant achievement of cognitive objectives, TV presentations need supplementation by another person - a paraprofessional and/or parent.

TV with associated manual tasks (drawing, cutting) has major effects on perceptual motor development.

The noncommercial TV instructional program prepared by AEL was rated by parents to be as good as commercial programs for children.

Instructional TV is acceptable to parents for early childhood education.

The use of three learning components, i.e., TV with home visitor and mobile classroom, increased children's curiosity (desire to explore and control environment). The use of television alone or TV and home visitor without the mobile classroom was not as effective in stimulating curiosity.

With regard to the results of this program however, differences in parental characteristics and actual viewing time by the various treatment groups make it impossible to reach firm conclusions regarding the influence of the Appalachian program on children's behavior.

(See Chapter IV for a description of this program.)

CHAPTER IV

DESCRIPTIONS OF ONGOING OR PLANNED RESEARCH IN FEDERAL AGENCIES

Federally Funded Projects - FY 72

This section contains descriptions of research projects in television for children that have been funded in FY 72. Additional projects may be funded before the end of the fiscal year.

1. Appalachian Preschool Education Program
2. The Third Season of Sesame Street 1971-72
3. A New Reading Program - The Electric Company
4. Teacher Education Program - Microteaching
5. Televised Parent Training Program - Environmental Enrichment
6. Federation of Rocky Mountain States, Inc. - Satellite Study
7. Alaska Project - Satellite TV
8. National Educational Telecommunications System
9. Appalachian Satellite Study
10. Feasibility Study Leading to the Development of Captioned Television
11. Evaluation of Mr. Roger's Neighborhood
12. Social-emotional Growth and Physical Health Segments for Captain Kangaroo

OE - Appalachian Preschool Education Program

This program has been developed by the Appalachian Educational Laboratory, Inc. and uses television lessons, home visits and group instruction in a mobile classroom to provide preschool education to the isolated and widely scattered population of rural areas. The project began in 1967 with a set of appropriate behavioral objectives for the Appalachian preschool child. The objective of the program is to develop a home-oriented program of preschool education that will prepare children to perform the tasks in language, cognition, motor skills, and orienting and attending skills expected of the average child at the first-grade level.

The program's television series is shown each weekday morning during the school year. The TV teacher is a "friend" who invites the children, watching at home, into her room where she reads stories and poems, paints, makes collages, and introduces letters, numbers, colors and concepts of classification. The child is visited once a week for about 30 minutes by a paraprofessional home-visitor who brings a library book for the child, a guide to the week's television programs, a newsletter for the mother, and any special materials the child will need when he watches the TV program. The home visitor spends time with the child in activities that reinforce the television program and serves as a model to the mother in teaching the child. The objective is to directly involve the parent in the instructional process. A specially designed and fully equipped mobile classroom staffed by a certified teacher and an aide makes two to three stops a day. At each stop 15 children gather at the classroom for group learning experiences. Activities in the mobile classroom are planned to reinforce the concepts introduced by the TV program and the home visitor, and to promote social growth.

The cost of the program has been calculated at $248 per child per year, about half the cost of conventional classroom instruction in mountainous Appalachia. The program is designed to operate on a regional basis encompassing several school systems. Program performance is predicted on a population unit of 25,000.

FY 72 plans include preparation and dissemination of a series of manuals for use in the implementation of the Appalachia Preschool Education Program, demonstration of the program in three states in the Appalachian region, and development of a consortium in the Appalachian region for the production of a new generation of TV lessons and utilization of the program. The FY 72 effort is estimated at $320,000.

OE - The Third Season of Sesame Street 1971-72

The Office of Education is continuing its co-sponsorship of Sesame Street, the educational television program for preschool children developed and produced by the Children's Television Workshop, and broadcast nationally since November, 1969.

The third season which began November, 1971, will consist of 130 hour-long television programs, produced in color, for broadcast every weekday and continuing on the air by use of repeat programs until November, 1972.

Concurrently, the Children's Television Workshop will produce a second program series designed to teach reading to children at early elementary grade levels. Plans for this series are described below.

Sesame Street is the product of a deliberate effort to apply the production techniques and entertainment values of popular commercial television to an instructional curriculum for pre-school children, with special emphasis on the needs of the urban disadvantaged child.

Four essential features of the project are unusual if not unique:

1. the expensive production techniques of popular commercial television are used to teach an educational curriculum;

2. information, promotion and utilization efforts have been far more ambitious than any ever before undertaken in public television;

3. the budget (almost $8 million for the first two years of the experiment) provided for an eighteen month pre-broadcast period of research and development; and

4. program development has been a collaborative effort of television producers, academic advisors, and full-time staff of educational researchers.

The evaluation of the first year of Sesame Street has established that the program succeeded in teaching its target audience, the cost per child was extraordinarily low compared with the cost of classroom presentation of a similar curriculum, and the success of the teaching resulted from the innovative application of the technology.

The curriculum of the second year was revised and expanded in several goal areas. Additional emphasis was placed upon pre-reading skills, and a small, carefully selected reading vocabulary was presented. An effort was made to teach a small Spanish-English vocabulary, and the program continued to include more material reflecting black cultural life and language styles.

The goals of the second year were grouped under four headings: Symbolic Representation, Cognitive Organization, Reasoning and Problem Solving and the Child and His World. Results of the second year's program are summarized in the previous chapter. Second year goals are listed in Appendix B.

The third season of Sesame Street in general retains the basic program format which has been successful and popular during the first two years of programming, and which works well in coordination with the Workshop research design. No great investment will be required in the set, costumes, props and so forth. Some changes in characters and casting will no doubt occur, as they ordinarily do in an ongoing production situation. These are not likely to be major, except for the development of a more visible and effective Hispanic character, a particular concern of the Workshop's.

The third season of Sesame Street is built around a curriculum of preschool instructional goals similar to that of 1970-71, but modified in several areas based on another year of experience with the production and evaluation of the programs. Continued modification and refinement of the instructional goals of Sesame Street is now in effect built into the Workshop operating model, with a regular seasonal review of the year's production. This year's review centered on revision in three old goal areas: pre-reading, social and affective development, and reasoning and problem solving, and in one new area, environment. Additionally, CTW will undertake this summer a study of possible bilingual curriculum areas.

In the pre-reading area, the Sesame Street staff will build a series of experiments into the program which will place the emphasis on

-- providing training in visual and auditory discrimination,
— teaching a limited number of letter sounds in order to illustrate sound/letter correspondence,
-- providing training and repeated practice in verbal blending.

In this revised curriculum the major goal is for the child to understand the relationship between spoken and written language.

The instructional goal area of reasoning and problem solving, central to the Sesame Street curriculum from the beginning, has always been the most difficult to translate into effective television. In the third season the staff will concentrate on production and evaluation in only a few carefully defined sub-areas, and if that is reasonably successful the techniques may perhaps be generalized.

Methods of developing direct and indirect instruction in the social and affective areas have been explored. Programs on the quality of the environment include study of man-made and natural environments.

Seven to eight million children will be served during the third year of Sesame Street, based on surveys by the A.C. Nielson Company. The combined Federal support for Sesame Street and The Electric Company (described below) in FY 1972 is $7 million.

CTW Concurrent Research Programs

In addition to in-house research designed to field test experimental programs for educational value and audience appeal, and testing of an entire season of programming by an independent evaluator, CTW is involved in other research endeavors. These have to do with field services and community relations, development of non-broadcast materials, training, and dissemination of information.

A major activity of the research staff in 1971-72, directed essentially toward dissemination of information about Sesame Street and extension of Workshop experience, is the research training program funded by the Spencer Foundation, with the following objectives:

-- to further knowledge about systematic approaches to research and evaluation which may be applied in the formative stages of developing educational materials.

-- to provide field experience for professional researchers who will carry out formative research themselves or train others to do so.

-- to explore new approaches to research in the instructional applications of broadcast television.

The training program will use the Sesame Street production and research activities as a laboratory workshop, at the same time using the trainees to augment the CTW research staff in accomplishing their projects for 1971-72.

OE - A New Reading Program - The Electric Company

With three nonfederal sponsors, the Office of Education is sharing the funding of a televised reading program, researched and produced by the Children's Television Workshop (the producers of Sesame Street), which began broadcasting on national television October, 1971. The new program is called The Electric Company.

Based on a year of research and consultation with reading experts and educators, the conclusion was reached that "a television program embedding a carefully planned curriculum of reading instruction in a highly entertaining show format" could be of considerable value to children who are failing to learn to read in school. The target audience are children in the early grades - second, third and fourth - who are beginning to experience reading difficulty. The primary audience is the second-grader in the lower half of his class with regard to reading achievement. In addition, it is expected the program will be viewed by younger and older children and by illiterate adults.

The Electric Company is confining itself to a limited set of instructional goals. The reading curriculum focuses on the development of a number of basic reading skills especially lacking in the target audience and particularly suitable for presentation on television. The basic goals deal with learning the alphabet code, strategies for spelling/sound analysis and strategies for reading comprehension.

One hundred and thirty half-hour programs will be broadcast daily by the more than 200 members of the Public Broadcasting Service and by some commercial television stations in communities where there is no educational television. The televised instruction will be supplemented by non-broadcast materials designed to provide teacher orientation and give the viewing child an opportunity to reinforce and extend his new learning in the context of the printed page.

The close interaction between research and production which has characterized the CTW operation will continue to guide production and curriculum decisions throughout the broadcast period of The Electric Company. A summative evaluation of the educational effectiveness of the experiment will be carried out at the conclusion of the broadcast season in 1972. Major information and utilization campaigns will be mounted, first to attract and hold the viewing audience, and second to assure the target child the follow-up activities necessary to maximize the program's impact.

These efforts will be especially concentrated in low-income areas both urban and rural. Parents and community groups will be enlisted to attract the poor reader to the show.

Some of the research questions that will be investigated are the following:

1. What is the over-all impact of the show on the target audience?

2. Does the show contribute to the prevention of reading failure among second-graders who would otherwise be likely to become poor readers?

3. Does the show have a remedial effect upon the poor reader in third and fourth grade?

4. Is the viewing circumstance (school viewing vs. home viewing vs. ad hoc viewing groups) a significant variable in show effectiveness?

5. What are the effects on urban poor, rural poor and middle-income children?

6. What attitudinal changes, in the child and in the teacher, can be attributed to the show?

It is expected that one or more side studies such as the following will be carried out as part of the presently proposed project, or by independently supported researchers in cooperation with the CTW research staff:

1. What are the special effects on Spanish-speaking children?

2. Are there sex differences in the show's effectiveness?

3. What are the effects on first graders, educable mentally-retarded children, school drop-outs, illiterate adults?

4. What are the show's effects on in-school reading performance and out of school reading activity?

5. How does the show's instructional approach interact with specific in-school instructional programs?

OE - Teacher Education Program - Microteaching

The Far West Laboratory for Educational Research and Development has developed a program which focuses on teacher training products designed to develop specific teaching skills and classroom behavior patterns.

The work of the Stanford Center for Research and Development in Teaching (SCRDT) in microteaching, modeling and basic teaching skills provided a research base on which this program was built. The microteaching approach which presents lessons via television, has produced statistically significant changes in the behavior of teachers.

The program has two major objectives. The first is to develop instructional models that can bring about major changes in specific teacher skills and classroom behavior. The second is to develop a subsystem of teacher education that would change teacher behavior in all or most of the teaching skills that appear to be critical to teacher effectiveness.

Most of the work to date has focused on the minicourse instructional model that involves a 3-step instructional sequence. First the trainee views a filmed instructional lesson that describes and illustrates one to three specific skills. Then the trainee views a film showing model teachers using the skills in microteaching situations to be sure he can recognize and discriminate among the skills and identify each as it occurs. Prompt feedback is provided. The second step requires preparation of a brief lesson using the skills covered and teaching this lesson in a microteaching situation with video- or audiotape feedback. Immediate replay of the tape provides opportunity for self-evaluation, using special forms. In the third step the trainee replans the microteach lesson and reteaches it with a different group of pupils.

Several minicourses are completed and available, such as Higher Cognitive Questioning and Individualizing Instruction in Mathematics. Others are scheduled for completion in 1972.

OE - Televised Parent Training Program - Environmental Enrichment

Prepared by the Central Midwest Regional Educational Laboratory, Inc. this program teaches reinforcement strategies to mothers of disadvantaged children.

A disproportionately high number of children from lower socioeconomic backgrounds suffer from environmentally imposed retardation. In school, children with this handicapp fall behind and their prospects for an active and constructive role in society are diminished. For many children, the original deficiency can be prevented if their early years are spent in an enriched environment. Yet, due in part to cost and unavailability of instruction, few parents have been trained in the use of specific enrichment strategies. The present need, then, is for cost-effective readily available, parent-training programs. The purpose of this project is to develop and test a relatively low-cost model -- programmed televised instruction -- by which thousands of parents can be trained simultaneously at home in techniques for enriching their children's environments. In addition, a broadcast-quality televised training program for parents in these techniques will be produced.

Research report — A television programming model for use by instructional programmers will be described. The developmental information, procedures for application, and the data from this project will provide for the development of other programs in various content areas.

Technological project — A training program for parents will be produced that includes an hour broadcast, quality videotape and accompanying programmed texts, and criteria checks for evaluation. This program is planned for 1972 completion.

OE - Federation of Rocky Mountain States Inc. - Satellite Study

The Federation of Rocky Mountain States has received two planning grants to explore the development of educational television programming which can be used in satellite communications in the Rocky Mountain Region.

The Federation has worked with the Western Interstate Commission for Higher Education, the Education Commission of the States and the Rocky Mountain Corporation for Public Broadcasting, and other regional groups, to examine uses for preschool and older children, and adults. The amount awarded for preliminary studies was approximately $57,000. Additional larger-scale planning and development activities will be financed out of FY 72 funds, with the major development, production, and installation funds coming out of FY 73 budgets.

A detailed description of the proposed project appears under the section on planned and proposed projects below.

OE - Alaska Project - Satellite TV

The Alaska Project while it uses a variety of media to reach a variety of audiences, includes the use of satellite broadcast television instruction to increase the utilization of Sesame Street in remote villages. Overall, this project addresses itself to the use of technology (videotape, recordings, radio broadcasts, Sesame Street, and satellite communications) toward solving specific educational problems of remote isolated Alaskan villages. Schools in 21 remote Alaskan villages will be linked together by means of an experimental satellite telecommunications system. Through the cooperative planning of a consortium of agencies and organizations, a series to test demonstrations of educational programs and services will be conducted and will include: a two-way radio communication "Teacher Talk" program to link teachers in the villages with each other and to experts at resource centers; community and vocational education information and interest programs; college credit courses for teachers; special services for learners with hearing loss problems; programs on the major cultures of Alaska and a series of programs to present Sesame Street programs to Alaskan youngsters. The project is funded at approximately $702,000.

OE - National Educational Telecommunications System

This study will examine plans and alternatives for the establishment of a nationwide telecommunications capability. Requirements will be forecast for a National Educational Telecommunications System (NETS) by 1980 with suggestions as to how various technology systems can be effectively utilized to provide coverage nationwide. Amount awarded for the planning grant: approximately $50,000. HEW exploration of the uses of modern telecommunications is described at length in the section on plans and proposals.

OE - Appalachian Satellite Study

The Appalachian Regional Commission has been awarded a contract to investigate the educational and public service functions of a fixed telecommunications satellite for the Appalachian Region. An analysis will be made of the various ground, in-place communications systems and an estimate will be made of the cost of completing these public service systems. A compilation of existing educational needs for telecommunications will be made in conjunction with the Appalachian states ETV agencies. The contribution which a fixed telecommunications satellite could make to fill these needs will be investigated and plans will be formulated for interstate cooperation. The technical questions concerning the operation of such a satellite will be summarized and the probable solutions will be outlined. Such questions as the most likely locations to start implementation and the local resources available are presently being studied. Amount awarded is $42,000.

OE - Feasibility Study Leading to the Development of Captioned Television

An investigation is being made of the alternative methods for making television a more valuable educational and recreational medium of communication for the hard of hearing population and to study, in particular, the effects of program captioning on the television viewing public with normal hearing. A total system to implement the captioning and subsequent transmission of network television programs is being designed and developed.

Present television is not responsive to the needs of the deaf and cannot be utilized except by those individuals trained in lip reading. It now appears possible, however, to provide a system wherein television programming can be captioned and displayed on modified sets, thus benefiting the deaf and hard of hearing. Such programming could provide remedial instruction, current events programming, public service programming, and entertainment programming. The contractor is being assisted in all phases of this study by representatives of all national organizations of the deaf.

OCD - Evaluation of Mister Roger's Neighborhood

As a subcontract from Educational Development Center, OCD supported a proposal for an overall strategy of evaluation for Mister Roger's Neighborhood television program.

The Mister Roger's Neighborhood program is geared to fostering positive social and personality growth in young children between the ages of 3 and 6. Five of the areas receiving most consistent attention on the program are self-concept, relations with others, emotional expression, play, and learning.

The central purpose of the proposed research is to evaluate the psychological impact of the program in terms of two types of experiment , the General Viewing Experiment, and Separate Short-term Experiments. The General Viewing Experiment attempts to measure the overall, cumulative impact of viewing the Mister Roger's Neighborhood program over the course of one year. Separate Short-term Experiments are proposed for evaluating the impact of specific program episodes on fear of hospitalization, jealousy over a new sibling, and learning about space exploration.

The research proposal is now in the Office of Child Development and action on this proposal is pending.

OCD - Social-Emotional Growth and Physical Health Segments for Captain Kangaroo

The Office of Child Development is funding the development of 50 physical and emotional health films to be seen by the three million preschool children who watch the daily Captain Kangaroo show on CBS network.

The films will be aimed specifically toward the three- to six-year age group, and will avoid conventional pedagogical approaches to health education, concentrating instead on the use of regular cartoon characters and live people with whom children can relate.

The specific subjects to be covered will include emotional development, the use of energy for work and play, proper nutrition, posture and exercise, dental care, sleep and other relevant health factors. Particular importance will be given to developing in the child a feeling of self-assurance and of greater appreciation of his own physical well-being, so that he will be less likely to turn to drugs and other activities which are harmful to health and growth as he grows older.

The series will be produced with the active cooperation of authorities throughout the entire field of child development, whose collaboration will help to assure the accuracy of the information to be presented in each of the filmed segments. This production of materials represents a unique cooperative effort involving a Federal agency, a national commercial television network and a producer of multi-media learning systems.

The 3-1/2 minute films will be integrated into the regular program format of ten weeks of the Captain Kangaroo show. It is expected that the film material will also be shown in Head Start programs, day care centers and school systems throughout the country. The 50 films are scheduled to be shown during the next spring season of Captain Kangaroo, and will be rebroadcast in the fall of 1972. A $500,000 contract has been awarded for the development of the material.

Federal Plans and Proposed Projects - FY 72

This section describes broad ranging plans as well as proposals for more specific research that are being considered by the Federal government for FY 72. The last one, although a non-Federal proposal, is included because of its potential significance.

1. White House Study of the Use of Communications Technology for Health, Education and Social Services Delivery
2. OS - Use of Modern Telecommunications for Child Care and Development
3. OE - Plan for a Satellite-Related Educational System Experiment
4. OE - ESAQIEA Preschool Project - Involvement of School, Parents and Community
5. OE - Bilingual/Bicultural Preschool Television Program
6. OE - Television for Handicapped Children
7. NIE - Planning for Use of Innovative Technology for Education
8. OCD - Parent Education for At-Home and Day Care Centers
9. Non-Federal Center for Research in Children's Television

White House Study of the Use of Communications Technology for Health, Education and Social Services Delivery

The study Evaluation of New Technology Opportunities prepared for the President's Domestic Council by a number of Federal agencies has as one of its main objectives consideration of the use of modern technology to improve the delivery of health, education and social services on a nation-wide basis.

This part of the study describes the use of communications technology for an improved low-cost social service delivery system for the following purposes:

1. A Regional "Open University" -- a plan to demonstrate on a significant scale low cost, universally available higher education
2. Child Development Services -- a program of media based support to parents, day care professionals and children that will help equalize and improve the developmental experiences of all our children. Special attention will be given to the problems of bi-lingual, bi-cultural children
3. Career and Basic Education -- a program of communications delivered services designed to provide youth with a realistic attitude and perspective on work; to impart certain universally needed skills; and to help individuals gain and profitably employ the skills our complex society needs
4. Community Services -- an effort to make the government's social services understandable and accessable to all at a neighborhood level through improved use of communications technology
5. Services for Special Groups -- some relatively simple and inexpensive programs that might be undertaken in conjunction with the above that would have great benefit to various handicapped and disadvantaged groups

To carry out the proposed plan will require the understanding and participation of both public and private sectors at national, state and local levels. The Federal government's role would be one of fostering innovation and encouraging use by example. The proposed Federal role has three main action elements as follows.

1. The commitment to develop certain kinds of software directed at specific problems and target populations.
2. A program of technology implementation to insure that the necessary communications hardware will be in place to deliver the educational software materials to the intended audience.
3. A long-term program of research, development and evaluation supported by appropriate legislation to enable states and localities to implement and extend the Federally demonstrated successes.

The "new technology" proposal was submitted to the Executive Office in December.

Office of the Secretary, DHEW (includes OASPE) - Use of Modern Telecommunications for Child Care and Development

DHEW by assignment from the President's Domestic Council has recently completed a study on the use of modern telecommunications capabilities (e.g., satellite and cable television) for improved delivery of education, health and social services information to a broad range of populations. That part of the proposed plan dealing with child development and care (including infants) is described briefly below. Proposed target populations include all children with special attention to the disadvantaged, the bilingual, the migrant, the handicapped and the gifted, children in rural areas and American Indian, Black and Chicano preschoolers. TV programs for day care children and at-home and hospitalized or institutionalized children are identified as special areas of application.

Television program development would be of two kinds. The first broadcast on a nationwide basis and designed to provide educational and developmental experiences for preschool and early school age children would build on and extend the concepts and approach of such current activities as "Sesame Street", "Mister Rogers Neighborhood" and "The Electric Company". Special consideration will be given to the needs of bi-lingual and bi-cultural groups in selecting, developing and expanding the collection of TV program material directed to child development. It is anticipated that one additional major effort of the scale of the Children's Television Workshop would be supported under this initiative as well as a number of smaller projects giving partial support to new series or even single programs.

The second category of program development would be those aimed at parents and others working with young children. Among the possibilities which might be funded are:

1. a series of parent-training programs concerned with the health, nutrition, safety and physical development of very young children (0-18 months) which emphasize the special needs of low-income parents and could include family planning concepts,

2. a series designed to be watched by parents and child together aimed at the 18-month to 3-year period and fostering joint play activities through which parents can help their children develop, and

3. a series intended for the professionals, paraprofessionals and parents who will be involved in the setting up and staffing of day care and preschool facilities.

In addition, several special demonstration programs would be mounted in selected areas that would involve two-way communications over cable TV or satellite systems and comprehensive support services. Such programs can serve as models to demonstrate to Federal, state and local officials the social benefits and economic validity of such services.

The stage of planning has not yet been reached which would identify the source or sources of funding and the management of such a broad scale program and broadcast facilities development effort. The report on program content was submitted to the Domestic Council December 1971, with the recommendation that $5 million be allocated for TV series development in FY 72 and $12 million for continuing program development and the mounting of demonstrations in FY 73. This information applies only to early childhood research and development efforts. The Domestic Council study covered other objectives and populations for which programs would be planned and provided by a broad range of Federal agencies.

In addition to the above Department-wide planning program, the Office of the Secretary has designated the Office of Telecommunications Policy to engage in a cooperative planning effort with OE's Division of Development, for study of the use of satellite television for child development. For example, OTP has cooperated in the development of the plan for broadcasting child development programs by satellite in the Rocky Mountain region. In this project, NASA is to provide the satellite facilities, OE and OS are responsible for mounting the rest of the program and OE will be responsible for program management. (This and other OE administered projects are described below.) OASPE will invest $50,000 in FY 72 for the evaluation of the Rocky Mountain project.

OE - Plan for a Satellite-Related Educational System Experiment

Working together, the Office of Telecommunications Policy (OS) and the Development Division (OE) have outlined needs for the long-range systematic development of a satellite-related educational telecommunications network, expected to become operational in the early 1980's. A first stage in the long-range effort will involve experimentation with the NASA ATS-F communications satellite which will be launched in May of 1973. HEW has been given use of the satellite during a portion of each day for 11 months for educational telecommunications experiments. The major issue now is to determine the most efficient use of ATS-F as part of a long-range planning strategy, since the satellite will be available for use only for a year. The ATS-F is to be used to apply selected communication techniques to the performance of educational functions in order to provide new information contributing directly to the selection and implementation of new communication techniques--both satellite and terrestrial.

In the year of experimentation and demonstration attention will focus on issues falling into two main categories: system configuration and utilization. Emphasis will be placed on the identification of varying mixes (configurations) of hardware, software, and utilization components and demonstrations as to their cost-effectiveness. The satellite communications network makes possible the transmission of information both in visual and sound modes, so that conventional TV may be transmitted. The information can also be in digital mode so that the use of computers as part of the system is possible. Transmission can be one-way or two-way, and can thoroughly provide for interactive experiences between the learner and instructional elements. The system characteristics permit a variety of media or system combinations, with learner interaction. Several of these will be tested with a variety of populations, settings and conditions.

The more difficult set of questions may fall under utilization "because the history of educational technology is a story of failure to penetrate to the core of instructional practice - of failure in other words to get practicing educators to use films, television and other technological devices". A major question to be examined, therefore, is what can be done to insure that newly developed instructional systems are used in schools or day care centers so that technology can be an integral part of the learning system. Training programs, expanded use of local facilities, and the participation of community representatives working with educators to select educational and utilization methods are all part of the utilization strategy.

A unique characteristic of the satellite is its ability to transmit information over a wide geographic area at relatively low cost. The experimental target population will be located in the eight states of the Rocky Mountain region which offers a variety of settings (urban, suburban, rural and isolated) as well as a range of ethnic and SES groups. System configurations will be used with Blacks, Indians, Chicanos, Anglos and migrants, both advantaged and disadvantaged. The experiment will focus on early childhood and career development needs.

The general objective of the early childhood focus will be to address important aspects of total child development which bear upon the acquisition of specific skills, for the age group three to six, and for the various identified target audiences. There will be two complementary activities in implementing this objective:

1. providing education directly through involvement of the target group in educational systems employing various levels of technology and personnel utilization; and

2. providing a learning enriched environment for assisting parents, professionals and paraprofessionals to work more effectively with children.

Several aspects of overall child development will be examined and it is expected the following categories will be included: cognition, social-affective, language development, sensorimotor learning and social-cultural understanding.

Parent participation is considered an essential part of the program, as well as the competent participation of paraprofessionals working with children, parents and community agents. The parent and the instructional component, including the paraprofessional (or professional) as teacher and care-giver, will be developed to be complementary and mutually supportive. Parent and teacher training can be done via television.

A planning proposal prepared by the Federation of Rocky Mountain States is presently to be evaluated. The FY 73 budget, for the major development and launching activities, is estimated at $5 million.

OE-ESAQIEA Preschool Project - Involvement of School and Parents and Community

A plan of the School Systems Division proposes that OE engage in a national effort in the preschool area with the objective of demonstrating the feasibility of preschool education so that more school systems will accept the education of preschoolers as a significant responsibility. The plan provides for the development and demonstration of a preschool education model with the following key elements:

1. the establishment of preschool programs in urban, suburban, and rural areas,
2. formal and informal links between the preschool programs and local elementary schools,
3. training and use of community personnel and mothers as volunteer tutors in the programs,
4. training and use of parents to reinforce preschool program efforts in the home.

The school would make available a preschool program coordinator and supplementary learning resources. Classes would be conducted by parent volunteers in homes or community locations; there would be a parent advisory group. Since this is not a day care effort, it would have the most impact on the population of at-home children and counts on the participation of family or other at-home adults or home volunteers.

The chief focus of the educational effort would be the daily viewing of Sesame Street on public broadcast channels. Daily two-hour sessions would allow for reviewing the previous day's program, viewing the new program, discussing the new program and working with other learning materials, and "socializing". The children would receive lessons and books to take home. Others in the home would receive instructions for participating in the support of the learning experience so that the home may become a more stimulating environment for the participating preschooler. Pilot studies on the use of cable TV and cassette videotapes for conventional TV sets, and the development of program materials are recommended.

For the first year of the Project, it is proposed that 3-to-5 year olds in the country's 15 largest central city areas be included in the preschool classes. It is estimated 600,000 disadvantaged children could be served at the cost of $80 per child for a 30 week session ($48 million total). For the first year effort and for expanded programs in subsequent years, funding is hoped to be provided by the Emergency School Aid and Quality Integrated Education Act, now in Congress. Statements of capabilities from potential developers are being studied and arrangements for FY 73 funding considered.

OE - Bilingual/Bicultural Preschool Television Program

OE's Development Division hopes to fund in FY 72 a proposed series of television programs for the education and development of the bilingual English-Spanish speaking preschool child. A plan prepared by Dr. Rene Cardenas of the Berkeley Unified School District discusses various aspects of such a project. What follows is taken from Bilingual Children's Television.

A daily television program could be carried nationally on both educational and commercial television stations. The programs would be appropriate for all children but the setting, problems, and daily situations would be directed to the Spanish-origin preschool child. The program developed would feature the most imaginative means for fostering the intellectual and cultural development of the child. In addition, a training program to run concurrently with the television show would be established to assist preschool and kindergarten teachers in utilizing the show as a major tool in the learning and readiness activities of the child. Children's follow-up learning materials and parent and teacher training materials would be used. As much as possible, already researched and developed approaches and materials would be "borrowed" from other programs.

Programs could be linked with existing Federal and state projects that encompass the preschool child, bilingual and bicultural goals, and community activities. Workers would go into homes in the community to encourage a broader viewing of the program than might otherwise occur and to insure parent participation in the home.

The central concept around which the program would be fashioned is based on the following general goals:

1. To help children feel better about themselves.
2. To help children develop academic skills and problem-solving abilities.

The philosophy motivating the work in the program would incorporate the following principals:

1. The child is a person of great worth.
2. Children learn best when they are responsible for ordering their own environment.
3. Self-discovery motivates and excites

4. Exploration is an important process for achieving adequate growth.

5. Adults can assist the child in organizing his world.

6. When children learn how to learn they become independent learners, more capable of making intelligent decisions.

Inherent in the concept of an educational bilingual children's program would be not only delivering the skills of alphabet recognition, decoding, vocabulary and comprehension, but also, and this is very important, using the child's own language as the vehicle for instruction. Heretofore, Spanish-speaking children in this country generally have thought of their language as a drawback, lowering their self-concept. In many cases this is because of teachers' general response to their ability to speak Spanish. But as we are finding in bilingual classrooms, when the teacher, the respected adult, not only knows both Spanish and English, but teaches in both and praises a child for his own knowledge of Spanish, a whole new identity emerges.

Such a program would differ from the Children's Television Workshop programs in its emphasis on bilingual children, closer linkage with the schools and the use of the discovery and environmental approach rather than the direct stimulus-response approach used by CTW.

OE - Television for Handicapped Children

One would logically assume that sound motion pictures, television and other telecommunications materials would be an added advantage to handicapped persons such as the deaf, blind and orthopedically handicapped. Unfortunately the expected promise of such devices has been less than one would intuitively have expected.

Blind people do not get from the present sound tracts of film and television the richness that was once carried by radio drama, for example. Deaf persons do not realize the full potential of motion pictures and/or television unless they are sub-titled or captioned. For the deaf the richness of the silent motion picture was much more meaningful than today's productions.

In 1958 the Captioned Films for the Deaf Program of BEH* began to make feature motion pictures available to the deaf community. In the early 1960s the law was expanded to allow for the development of new materials and the captioning of educational materials. This early effort at captioning used a criteria developed from experience of deaf adults and educators of the deaf. More recent formats allow captioning at the rate of 144 words per minute - a closer equivalent to spoken narration.

Efforts are being made for expansion in the area of television for and about the handicapped. A proposal is under consideration with the producers of Mister Roger's Neighborhood for the production and presentation of twelve 30-minute television programs. "Mister Rogers" is viewed daily over 200 public television stations by millions of young children. These proposed airings of "Mr. Rogers" would include the handicapped as major performers in each program. They would be designed to modify attitudes of the handicapped and reduce the stigma and the negative value of "differentness". This will serve to assist children with acceptance of their limitations as a necessary precondition of fully developing their capabilities. Such programs would also suggest to the non-handicapped the many possibilities for meaningful relationships with the handicapped.

For next season the programs of the Julia Child series, "The French Chef" have been captioned and will be aired by the Public Broadcasting System. This has been a significant breakthrough and further negotiations are underway with the Public Broadcasting System for the captioning and showing of other PBS-controlled materials for children.

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* Bureau for the Education of the Handicapped

A method for captioning any television program using existing technology has been discussed with personnel of the National Bureau of Standards and the Federal Communications Commission. Using the vertical scan lines, captions can be placed on almost any part of the television screen. The present use of the vertical scan lines is reserved for use by the FCC and special permission would have to be granted for use by other groups or agencies. It is anticipated that approval to use this system for programming for the deaf will be granted by the end of the year.

Additional research is needed on captioning rate, attending behavior of deaf viewers, pacing, eye movement studies and animation techniques for the deaf. As additional research and demonstration funds are made available, plans will be made to study factors which have a bearing on how the deaf learn.

Recognizing the need for advanced technology and new instructional approaches, including the use of television, the BEH plans the development of a National Center on Educational Media and Materials for the Handicapped. This Center will provide a comprehensive program of activities to facilitate the use of new educational technology in education programs for handicapped persons, including designing, developing and adapting instructional materials. This Center will be located at an institution of higher education which has a demonstrated capability in the areas of educational technology and special education. On a competitive basis, an award will be made for this Center in FY 72.

The Bureau for Education of the Handicapped, therefore, is just beginning to explore the uses of television for the education and development of handicapped children. One study is presently underway which is exploring the feasibility of TV captioning for the deaf. The description of this project appears in the ongoing projects section.

In the broader field of educational technology a wide range of research and development activities are funded for the handicapped. They deal with the study of multi-media systems, film, audiovisual materials, instructional packages, programmed instruction, computer-assisted instruction and the systems approach to the planning and development of instruction. The audiences are children with different kinds of handicaps, their parents and teachers. Because of the variety and comprehensiveness of the OE research and development program in the use of technology to serve the handicapped, brief descriptions of the projects are attached in Appendix C.

NIE - Planning for Use of Innovative Technology for Education

The upcoming National Institute of Education will present plans for a number of major new program alternatives in the Spring. One of the areas being studied is the development of models to foster increased productivity in education. These models will be addressed primarily to the problems presented by the education system's failure to adapt technological innovations and use existing technology effectively.

Feasibility studies will be conducted in these and other areas over the next few months, with selection of areas to be developed to be made by the NIE director.

OCD - Parent Education for At-Home and Day Care Children

First steps are being taken to set up a pilot study of ways to teach mothers with children at home and in day care centers more about assisting the healthy development of their children. As a first step it is proposed interviews be conducted with mothers of day care children to help determine parent education needs. The proposed method is to develop 1/2 hour TV shows for parents based on Mr. Roger's Neighborhood, and to prepare supplementary materials suggesting parent-child activities growing out of the show. Such details as the number of shows, the range of the broadcasts and the exact nature of materials have not been determined.

Non-Federal Proposed Center for Research in Children's Television

As a step toward understanding the effects of visual media on young children, the Harvard Graduate School of Education has proposed a collaborative arrangement between a member of the University and an operating television facility - Harvard's Laboratory of Human Development and the Children's Television Workshop - to establish a research center for children's TV.

For Harvard, this affiliation provides a working relationship with an organization that recently has become a major influence on American education and continues to initiate educational innovations. The Workshop provides a continuing research laboratory for studying the effects upon young children of alternative forms of instruction, especially those that include the use of visual media. For the Children's Television Workshop, the affiliation provides a working relationship with a major contributor to basic research and to the training of educational professionals. This is significant since the Workshop's central role as a television production center prevents it from conducting all the basic research studies that deserve attention. The Center's training function will provide an orderly mechanism for helping bright young people to enter the fields of television research and production, thus making provision for the essential influence on television programming of basic knowledge about child development.

Numerous basic research questions ranging from the immediately practical to the more theoretical would be studied at the proposed Center. Here are some examples of questions for study:

1. How does a child use, or fail to use, what he has learned through television?
2. What are the effects of different conditions of viewing?
3. What is the effectiveness of learning from a visual media among children as young as one and two years of age?
4. What are the physical, physiological, or medical consequences, if any, of television viewing by young children?
5. What do the parents of young children - especially families in inner-cities - want for their children from (a) the schools, (b) other educational resources, including television?
6. What is the effectiveness of learning from television among children in other countries, where experience with the visual media is less common?

7. What conditions facilitate cross-modal reinforcement in the learning of young children? Psychologists have studied the comparative effectiveness of pictures and words in teaching, but little is known about how sights and sounds can be coordinated into effective combinations that facilitate learning.

8. What are the conditions of observational learning? What are the conditions and effects of imitative learning for long range behavior?

The proposed Center will begin small and remain small in staff, financing and the scope of its functions. It would be expected to last only as long as the research and training demands are pressing in the areas outlined above and other resources unavailable to meet them. Various support arrangements are presently being studied and final decisions will be made in the next few months.

CHAPTER V

COMPARISON OF RESEARCH NEEDS AND RESEARCH ACTIVITY - CONCLUDING STATEMENT

Comparison of Research Needs and Research Activity

In this study, we have analysed a variety of state-of-the-art and other documents dealing with TV and children and described and summarized both ongoing and proposed Federal television research programs for FY 72. Further, we have, through a synthesis of results and recommendations, presented a set of questions considered to be of critical importance in future research which deal with the influence of television on child behavior and development.

As a base for our work we have developed an outline or hierarchy of topics which represent possible foci of future investigations in the area of television and young children. In this final chapter we will make a quantitive comparison of the topics the outline suggests need study and the areas that have been or may be studied in past, present and future research.

It must be remembered of course, that an examination of this kind can give only a general picture of the amount of activity in any one research area. However, it does make one or two important points dramatically clear. The information is summarized in the following table.

The information in the Table shows that one of the most popular areas of research has been, is and will be in the developmental processes. However in other major areas of research the difference in focus between past and present activity is quite striking. The most popular areas for completed research have been Content and Presentation questions and various aspects of Viewing Habits. These are the very areas which are receiving the least attention in ongoing research and will be studied least in the future. Conversely, all of the areas most neglected in the past: Development, Transmittal and Technical Problems, Application, Research Planning and Evaluation (Process) and Research and Policy Issues are just the areas to be emphasized in ongoing and planned research.

What are the possible reasons for this situation? It is suggested that the increasing need and demand for improved educational and social services, and the presence of a highly developed modern telecommunications technology to deliver these services have worked together to cause the shift in research emphasis. For example, before the perfecting of cable and satellite television, with their capability for two-way communication to much wider audiences, the possibilities of TV as a medium for assisting the growth and development of children were much more limited. And, therefore, the knowledge requirements (while great) were much more restricted in nature.

Much of the research in the past may be characterized in general as being narrow in scope, perhaps more resembling laboratory than broad-scale field research and requiring less funding per project. The trend of the future, at least in government research, is to large-scale, expensive developmental and application efforts and away from more basic research questions. (Frequently, small-scale planning grants are made to determine needs or evaluate the best application of a proposed research effort, but this is not basic research.)

Concluding Statement

The evidence suggests that a possible future research gap is the need to study the need for continued basic research, both in television as such and in the areas of child development that are related to learning from television. A pertinent question is how much does past television and child development research (basic and otherwise) have to contribute to the new and future TV hardware and software developmental efforts? Thus, again, a major need is indicated for developing dissemination methods - in this case for the dissemination of research knowledge from researcher to developer. The tremendous gap that must be filled here is the information channel between research and development. Demonstration projects are frequently used for this purpose, but their success is often questionable. Other means for dissemination must be studied. And the possible need and support for continued basic research must not be ignored.

The second major conclusion, for which evidence has been accumulating throughout this report, is the need for the distribution of information about television research, and on the basis of improved information the more thoughtful planning of research. The amount of research activity and the number of research projects is expanding - from two or three significant Federal efforts in FY 71 to some 13 projects funded in FY 72, with the likelihood of additional expansion in the future.

In order to avoid disappointment in the results of these hopeful efforts and to provide for economical spending, broad-scale interdisciplinary planning of television research is essential. Neither short-term nor long-term research on the effects of television on child development will have the finest possible results without cooperative research effort and planning.

TABLE I

Research Areas Appearing to Need More Study (Need Further Analysis for Confirmation)

X means less than half the studies focused on
the research issues indicated

Major Research Issues and Questions	Research Emphases Noted		
	Completed	Ongoing	Planned
I. Substantive Research Issues A. TV and Child Development			
B. Content and Presentation		X	X
C. Development of Programs and Equipment	X		
D. Transmittal Systems and Technical Problems	X		
E. Application	X		
F. Viewing Habits		X	X
G. Population and Effects	not ascertained		
II. Research Process Issues	X	X (5 out of 12 projects)	
III. Research and Policy Issues	X		

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Appendices for

The Status of Research in Children's Television

Interagency Panel for Early Childhood Research and Development

January, 1972

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Appendix A

TELEVISION AND SOCIAL BEHAVIOR PROGRAM REPORTS AND PAPERS

(Surgeon General's Scientific Advisory Committee
on Television and Social Behavior)

Television and Social Behavior Program

Reports and Papers

	Author and Title	Subjects	Description
1.	Baldwin & Lewis Violence in Television: The Industry Looks at Itself	48 producers, writers and directors	Interviews were conducted with the writers, producers, and directors of network action-adventure programming. The respondents were asked to describe the role of violence in such programs and how the industry handles this aspect (i.e., censorship activities). In addition, the subjects were asked to respond to the critics of television violence and to comment on their beliefs about the possible effects of viewing televised violence.
2.	Bechtel, Achelpohl & Akers Correlates between Observed Behavior and Questionnaire Responses on Television Viewing	20 families Total N = 82	Video tape cameras were installed in the homes of participating families. Observations of viewing behavior were continously recorded for five days. The video-tape records were coded, in 2-1/2 minute intervals for attention to the set (e.g., watching/not watching), and types of simultaneous activity (e.g. eating, reading). These behavior records

2. (Con't.)		were compared with the viewer's responses to questionnaire measures of viewing behavior.
3. Blatt, Spencer & Ward A Cognitive Developmental Study of Children's Reactions to Television Advertising	20 children 5 kindergarten 5 second grade 5 fourth grade 5 sixth grade	Children were shown a one-hour video-tape of "Saturday morning" television programming which included cartoons and other children's programs, plus 15 minutes of commercials. On the following day, the children were interviewed, in groups of five, concerning their reactions to the commercials (eg. recall and understanding of the commercial message) and general attitudes toward advertising.
4. Cantor The Role of the Producer in Choosing Children's Television Content	24 producers and writers	Twenty producers and four writers of children's programs were interviewed. Respondents were asked to describe the manner in which shows are selected by the networks and sponsors; the relationship between the producers and network; and the producer's conception of the audience for his program.
5. Chaffee Television and Adolescent Aggressiveness		A summary of current research on the relationship between viewing televised violence and the aggressive behavior of adolescents.
6. Chaffee & McLeod Adolescent Television Use in the Family Context	1292 junior and senior high school 641 eight grade 651 tenth grade	This survey related adolescent's television viewing (e.g. viewing televised violence) to factors such as; I.Q., Parent's television use. SES, and

		The latter factor was defined by the parent's relative emphasis on either socio-(i.e., maintaining interpersonal harmony/repression of conflicts) or concept-(i.e., free discussion and mutual understanding of conflicts) orientations.
7. Clark Race, Identification, and Television Violence		
Experiment I	71 teenagers 38 white 33 black	Adolescents were shown a videotape of a Dragnet episode which featured three main characters: "Black Militant", "Black Policeman", and "White Policeman." The subjects viewed the program in either racially-"mixed" or "homogeneous" groups. Post viewing questionnaires assessed the viewer's identification with the various characters and the role of black consciousness in such identification.
Experiment II	45 white, college students	Subjects viewed the Dragnet program in dyads composed of either a black or white confederate who either engaged in social communication (i.e. friendly conversation) or remained silent during the viewing period.
8. Clark, & Blankenburg Trends in Violent Content in Selected Mass Media		Several forms of mass media (e.g. front-page newspaper stories, a weekly magazine, and television entertainment programming) were inspected for the presence of violent content and their treatment of violent themes. Comparison were obtained between media violence and environmental or real violence (i.e. FBI Uniform Crime Reports).
9. Comstock Media Control and Content: An Overview		A review of this program's research on decision-making in television production and violence in television content.

10.	Dahlgren Television in the Socialization Process: Structures and Programming of the Swedish Broadcasting Corporation		A description of the broadcast policies of Sveriges Radio.
11.	Dominick & Greenberg Attitudes Toward Violence: The Interaction of TV Exposure, Family Attitudes, and Social Class	838 children 434 4th, 5th and 6th grade boys 404 4th, 5th and 6th grade girls	Each child's prior exposure to televised violence, his perception of his parents attitudes' concerning the appropriatness of violence, and his family's socio-economic level were related to various measures of the child's attitudes toward violence (e.g. willingness to use violence, perceived effectiveness of violence, and approval of aggression).
12.	Ekman, Liebert, Friesen, Harrison, Zlatchin, Malstrom & Baron Facial Expressions of Emotion While Watching Televised Violence as Predictors of Subsequent Aggression	65, 5-6yr. children (30 boys and 35 girls)	Children's facial expressions while viewing televised violence were used as an index of the child's emotional reaction to such fare. This index was then used to assess the relationship between the child's emotional response to observing violent acts and his subsequent willingness to engage in interpersonal aggression.
13.	Feshbach Reality and Fantasy in Filmed Violence		
	Experiment I	129, 9-11 year old children	Children viewed either real (i.e., newsreel), fantasy (i.e., Hollywood movie), or control (e.g. circus movie) films and were then allowed to play a game in which they could engage in aggressive acts against an ostensible victim.

13.	(Con't.)		
	Experiment II	40, 9-11 year old children	In this study, each child was informed that the movie he was about to view was either real ("NBC newsreel") or fantasy ("Hollywood movie".) Measures of the child's subsequent aggressive behavior were identical to the first study.
	Experiment III	30, 9-11 year old children	This study was similar to the second experiment except that each child was informed that his aggressive behavior in the "guessing game" was only make believe. Results of this study were compared with the results of the previous experiment.
14.	Feshbach & Singer Television and Aggression: A Reply to Liebert, Sobol, and Davidson		A reply to a critique of the catharsis thesis. (see items 15,34, and 35).
15.	Feshbach & Singer Television and Aggression: Some Reactions to the Liebert, Sobol, and Davidson Review and Response		A response to a comment on a reply to a critique of the catharsis thesis. (see items 14, 34 and 35).
16.	Foulkes & Belvedere & Brubaker Televised Violence and Dream Content	40, 10-12 year-old boys	This study was designed to assess the relationship between viewing televised violence the subsequent content of the child's dreams. Children viewed either a vioelnt or non violent program immediately prior to bedtime. Their dreams were monitored during the sleep period and scored on a variety of dimensions (e.g. hostility, vividness and hedonic tone).

17.	Friedman & Johnson Mass media use and aggression: A pilot study	80 pre adolescent boys 40 "aggressive" 40 "non-aggressive"	Adolescent's attitudes toward aggression (e.g. tendency to engage in overt physical aggression) and his patterns of television use (e.g., amount time spent viewing, program preferences) were studied in an attempt to assess the relationship between viewing televised violence and engaging in antisocial acts.
18.	Gerbner The structure and Process of Television Program Content Regulation in the United States		A description of broadcast and content control structures operative in American television programming.
19.	Gerbner Violence in Television Drama: Trends and Symbolic Functions		This study provided an analysis of the content of a one week sample of prime-time, entertainment programming. It described various factors relating to the frequency and symbolic characteristics of televised violence.
20.	Greenberg Television's Effects: Further Explorations		An overview of several current research projects that provide a diversity of theoretical and methodological approaches to research on the effects of television.
21.	Greenberg, Ericson & Vlahos Children's Television Behaviors as perceived by Mother and Child	85, 4th and 5th grade children and their mothers	Mothers, interviewed at home, were asked to describe their child's television viewing patterns (e.g., program preferences, rules about viewing) while each child answered similar questions in the classroom. The child's self reported television viewing behavior was compared with the mother's description.

22.	Greenberg & Gordon Perceptions of Violence in Television Programs: Critics and the Public	53 critics 303 men and women	A telephone survey (public) and mail questionnaires (critics) asked the respondents to rate the amount of violence contained in various television entertainment programs.
23.	Greenberg & Gordon Social Class and Racial Differences in Children's Perceptions of Televised Violence	325 fifth grade boys 89 low SES white 89 low SES black 90 middle SES white 57 upper SES white	This study assessed boys evaluation violence portrayed on television in terns of the degree of perceived violence, acceptability of violence, liking, degree of arousal, and perceived reality of the violent act.
24.	Greenberg & Gordon Children's Perceptions of Television Violence: A Replication	263 eight grade boys 66 low SES black 78 low SES white 37 middle- SES white 82 upper-middle SES white	A replication of the prior study conducted with younger boys (see item #23).
25.	Gurevitch The Structure and Content of Television Broadcasting in Four Countries: An Overview		An introduction to a review of the broadcasting policies of Great Britain, Israel, Sweden, and the United States.
26.	Halloran & Croll Television Programmes in Great Britain: Content and Control		A discussion of television broadcasting in Great Britain.

27.	Johnson, Friedman & Gross Four Masculine Styles in Television Programming: A Study of the Viewing Preferences of Adolescent Males	80, 8th grade boys 39 "aggressive" 41 "non-aggressive"	This study compared the program preference patterns of boys with a history of "social aggressiveness" with their non-aggressive peers in an attempt to construct a program classification scheme based on the masculine role concept portrayed in each program.
28.	Katzman Violence and Color Television: What Children of Different Ages Learn	240, 4th, 6th and 9th grade boys	Children viewed (in either color or black-and white format) a color television program which had been edited into either "high-violence" or "low-violence" versions. Post-viewing measures tested the child's recall of central and peripheral details and related this recall to the color/violence variations.
29.	Kenny Threats to the Internal Validity of Cross-Lagged Panel Inference, as related to "Television Violence and Child Aggression: A Follow-Follow-up Study		A methodological note on the research design employed in a study by Lefkowitz, Eron, Walder, & Huesmann (see item #30).
30.	Lefkowitz, Eron, Walder, & Huesmann Television Violence and Child Aggression: A Follow-up Study	875 children-third grade sample 382 adolescent-eigth grade sample 427, 19 year-olds	As part of a longitudinal study of childhood aggression, the investigators queried the child and/or his parents about his television viewing patterns (e.g. program preferences). Cross-lagged correlations between televison viewing at age three and adolescent aggressiveness at age 19 were obtained to provide causal inferences regarding television's role in the development of aggressive behavior.

31. Leifer & Roberts Children's Responses to Television Violence		
Experiment I	271 children 40 kindergarten 54 third 56 sixth 51 ninth 70 twelfth	Subsequent to viewing a television program which contained a number of violent acts each child was asked to evaluate the motivations and consequences surrounding each depicted act of violence. The child's understanding of these characteristics of violent act was then assessed in terms of the child's willingness to engage in aggressive behavior.
Experiment II	132 children 62 preschool 40 fifth 30 twelfth	Each child viewed a television program which was edited to provide one of four combinations of motivations/consequences for the portrayed violent acts: good-good, good-bad bad-good, and bad-bad. Post-viewing measures were similar to the prior study.
Experiment III	160 children 51 fourth 56 seventh 53 tenth	Children viewed one of two versions of a movie in which the justifications for aggression had been edited to provide for an "aggression-less justified" version. Post-viewing measures of aggressive behavior were similar to those employed in the first experiment.
Experiment IV	349 children 99 third 138 sixth 112 tenth	The temporal separation of the motivations for an aggressive act and consequences accruing to the aggressor on the child's post-viewing aggressive behavior, was explored in this present study. Measures of aggressive behavior were similar to previous studies.

32.	Liebert Some relationships between viewing violence and Behaving Aggressively		A review of current research on television's role in the imitation and/or disinhibition of aggressive behavior (with an additional report: Strauss & Poulos, "Television and Social Learning: A summary of the Experimental Effects of Observing Filmed Aggression").
33.	Liebert & Baron Short-Term Effects of Televised Aggression on Children's Aggressive Behavior	136 children (68 boys & 68 girls) (65, 5-6 year-olds) (71, 8-9 year-olds)	In this study the child-viewer's willingness to engage in interpersonal aggression was assessed subsequent to viewing either aggressive or neutral television programming.
34.	Liebert, Davidson, & Sobol Catharsis of Aggression Among Institutionalized Boys: Further Comments		A comment on a reply to a critique of the catharsis thesis. (see items 14,15 and 35).
35.	Liebert, Sobol, & Davidson Catharsis of Aggression Among Institutionalized Boys: Fact or Artifact?		A commentary on a study of the role of catharsis in evaluating the effects of viewing televised violence. (see items 14,15 and 34)
36.	LoSciuto A National Inventory of Television Viewing Behavior	252 families	A nation-wide sample of American families were interviewed concerning various aspects of television viewing such as; why people watch television, what they learn from programs, extent of viewing, and program preferences

37.	Lyle Television in Day-to-Day Life: Patterns of Use		A review of current research in this program, on the role of television in some aspects of daily life.
38.	Lyle & Hoffman Children's Use of Television and Other Media	1682 children 300 first 793-877, 6th 469-505. 10th	Children were interviewed about the role television plays in their daily life (e.g. extent and duration of viewing, program preferences, attitudes toward television, use of other forms of mass media). In addition, the mothers of first graders were also interviewed concerning their perceptions of the role of television in their child's daily life.
39.	Lyle & Hoffman Explorations in patterns of television viewing by preschool chidren	158 children 40 3 year-olds 82 4 year-olds 35 5 year-olds 1 6 year-old	A selected sample of Caucasian, Negro and Mexican-American preschool boys and girls were interviewed concerning their television viewing (e.g. program preferences, extent of viewing recognition of television characters). In addition mothers were interviewed concerning their child's television viewing patterns and perceived extent of learning from television.
40.	McIntyre, Teevan Television and Deviant Behavior	2270 junior and senior high school students	Questionnaire responses were used to provide an estimate of the relationship between Television viewing patterns (e.g. program preferences) and self-reported aggressive and delinquent behavior.

41.	McLeod, Atkin, & Chaffee Adolescent, Parents and Television Use: Self-Report and Other Report Measures from the Wisconsin Sample	624 students Maryland sample 229 7th Graders 244 10th Graders Wisconsin sample 68 7th Graders 83 10th Graders	Self-report, peer, and "other" rated indicies of aggressive behavior were related to various aspects of the adolescent's pattern of television use (e.g. extent of viewing, program preferences, cognitive reactions to televised violence),
42.	McLeod, Atkin & Chaffee Adolescent, Parents and Television Use: Adolescent Self-Report measures from Maryland and Wisconsin Sample		See item #41: A comparison between adolescent television viewing and self-reported aggressive or delinquent behavior.
43.	Murray Television in Inner-City Homes: Viewing Behavior of Young Boys	27, 5-6 year-old boys	Observation of in-home television viewing, parent-child interviews, diary records of one week's television viewing, and measures of cognitive and social development were used to provide a description of the role television plays in the daily lives of a selected sample of young boys (with an additional report: Furfey, "First Graders Watching Television).
44.	Neale Comment on: Television Violence and Child Aggression: A Follow-up Study		A methodological note on the Lefkowitz, Eron, Walder, & Huesmann study (see item #30).

45.	Rabinovich, MacLean, Markham, & Talbott Children's Violence Perception as a Function of Television Violence	57 6th grade children 24 girls 33 boys	This study was designed to assess changes in the child's perception of violence as a result of viewing televised violence. Children viewed either an aggressive or non-aggressive television program and were then presented with a discrimination task (i.e. identifying a tachistoscopically presented slide as either "violent" or "non-violent").
46.	Robinson Television's Impact on Everyday Life: Some Cross-National Evidence		This study was focussed on the respondent's allocation of time ("time-budgets") to various activities (e.g. work, child care, leisure, mass media use) in his daily life. Time budgets were sampled in 15 cities in 11 countries.
47.	Robinson Toward Defining the Functions of Television		A review of current research on the role of television in relation to other daily activities.
48.	Robinson & Bachman Television Viewing Habits and Aggression	1559, 19 year-old males	As, part of a nation-wide survey of the changing characteristics of youth, respondents were asked to indicate the extent of their television viewing program preferences, and the locus of "greatest-learning-about-life"--television vs. school. These findings were then related to the respondents self-reported incidence of aggressive and delinquent behaviors.

49.	Robinson & Israel Demographic Characteristics of Viewers of Television Violence and News Programs	6,834 adults	Informaltion on preferences and viewing patterns of a nation-wide survey of adult television viewers were related to various demographic characteristics (e.g. age, education, income and sex).
50.	Shinar Structure and Content of Television Broadcasting in Israel		A review of television broadcasting policies in Israel.
51.	Stein & Friedrich Television Content and Young Children's Behavior	97, 3-1/2 to 5-1/2 year olds 52 boys 45 girls	Preschool children were exposed to either an "aggressive, neutral, or prosocial" television diet and then observed during the course of their daily interaction with other children in their classroom. The observations were conducted over a nine-week period including three-week baseline, four-week controlled viewing, and two-week follow-up periods. Changes (over baseline) in either aggressive or prosocial behaviors were used to provide a measure of the impact of television programming.
✓52.	Stevenson Television and the Behavior of Preschool Children		A discussion of research findings on the impact of television in early childhood and suggestions for future research.

53.	Tannenbaum Studies in Film-and TV-Mediated Arousal and Aggression		A review of research and theory on mediating factors (e.g. emotional arousal) in the relationships between viewing televised violence and subsequent aggressive behavior.
54.	Wackman, Reale & Ward Racial Differences in Responses to Advertising Among Adolescents	1149, 8th-12th graders 1049 whites 100 blacks	This study was focussed on a comparison of the responses of black and white adolescents to television advertising in terms of their favorite ads, extent of "learning consumer roles", and reasons offered for viewing commercials.
55.	Ward Effects of Television Advertising on Children and Adolescents		A review and discussion of research, in the current program, on the impact of television advertising.
56.	Ward, Levinson & Wackman Children's Attention to Television Advertising	134 mothers of 5-12 year old children	Interviews were conducted with the mothers of young children in order to determine the short-term consequences of watching television advertising.
57.	Ward, Reale, & Levison Children's Perceptions, Explanations, and Judgments of Television Advertising: A further Exploration		An elaboration of the Blatt, Spencer, & Ward study (see item #3.)

58.	Ward & Robertson Adolescent Attitudes Toward Television Advertising	1094, 8th-12 graders	This study was designed to relate adolescent's attitudes toward television advertising to demographic characteristics, family communication patterns, and television use.
59.	Ward & Wackman Family and Media Influences on Adolescent Consumer Learning	1094, 8th-12th graders	This survey assessed the adolescent's "consumer skills" (i.e., recall of advertising content, attitudes toward commercials, materialistic attitudes, and buying behavior) and related these skills to various demographic character.
60.	Ward & Wackman Television Advertising and Intra-Family Influence: Children's Purchase Influence Attempts and Parental Yielding	109 mothers of 5-12 year-old children	Interviewers asked the mothers of young children to describe the "effects of television advertising" in terms of the frequency and intensity of their child's "requests" for advertised products.

Appendix B

STATEMENT OF INSTRUCTIONAL GOALS FOR THE 1970-71 EXPERIMENTAL SEASON OF SESAME STREET[a]

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[a] The goals stated here were distilled from an extensive series of seminars involving the staff, and the advisors and consultants of the Children's Television Workshop.

Statement of Instructional Goals for
the 1970-71 Experimental Season of Sesame Street

I. Symbolic Representation

A. Pre-Reading Goals

1. Letters

* a. Matching - Given a printed letter the child can select the identical letter from a set of printed letters.

* b. Recognition - Given the verbal label for a letter the child can select the appropriate letter from a set of printed letters.

* c. Labelling - Given a printed letter the child can provide the verbal label.

d. Letter Sounds

1. For sustaining consonants (f, l, m, n, r, s, v), given the printed letter the child can produce that letter's corresponding sound.

2. Given a set of words presented orally all beginning with the same letter sound, the child can select the letter associated with the sound from a set of printed letters.

3. Given a set of words presented orally, all beginning with the same letter sound, the child can select another word with the same initial letter sound from a set of words.

* e. Recitation of the Alphabet - the child can recite the alphabet.

2. Words

* a. Matching - Given a printed word the child can select an identical word from a set of printed words.

b. Boundaries of a word - Given a printed sentence the child can correctly point to each word in the sentence.

c. Temporal-Sequence/Spatial-Sequence Correspondence (Words and Sentences are read from left to right).

1. Given a printed word the child can point to the first and last letter.

2. Given a printed sentence the child can point to the first word and the last word.

* d. Decoding - Given the first five words on the reading vocabulary list (ran, set, big, mop, fun), the child can decode other related words generated by substitution of a new initial consonant. (ex. given the word "ran" the child can decode "man" and "can").

e. Word Recognition - For any of the words on the Sesame Street Word List, the child can recognize the given word when it is presented in a variety of contexts.

* f. Reading - The child can read each of the 20 words on the Sesame Street Word List.

Sesame Street Word List

1. ran
2. set
3. big
4. mop
5. fun
6. bird
7. bus
8. danger
9. exit
10. I
11. is
12. love
13. me
14. school
15. stop
16. street
17. telephone
18. the
19. walk
20. you

* g. Spanish-English Vocabulary (to be determined)

B. Numbers Goals

* 1. Numbers 1-20

* a. Matching - Given a printed numeral the child can select the identical numeral from a set of printed numerals.

* b. Recognition - Given the verbal label for a numeral the child can select the appropriate numeral from a set of printed numerals.

* c. Labelling - Given a printed numeral the child can provide the verbal label.

* d. Recitation

* 1. The child can recite the numbers from 1 to 20.

* 2. Given a starting point under ten the child can count from that number to any given higher number up to ten (ex. count from 3 to 8).

2. Numerical Operations

a. Enumeration - The child can define a set or subset of up to 10 objects from a larger set.

ex. 1 "Here are some pennies. How many are there?"

ex. 2 "Here are some pennies. Take two."

* 1. The child can recognize that the last number reached in counting is the total number in the set: ex. "Count the pennies. How many are there?"

2. The child can make use of counting strategies (ex. when counting objects arranged in a circle the child will identify the first object counted by marking it, moving it or noting a distinguishing characteristic of that object.)

b. Equality - The child can perform the appropriate operations needed to balance an equation.

1. Conservation of Number - The child can match sets of equal number regardless of configuration (ex. 000 = 0).
 0 0

* 2. Numeral/Number Correspondence - The child can assign the correct numeral to sets of differing numbers (ex. 000 goes with the number "3").

* c. Addition & Subtraction - The child can add or subtract 1. or more objects from any group of less than 10 objects.

* C. Geometric Forms (circle, square, triangle, rectangle).

* 1. Labelling - Given a drawing, cut-out or object in the shape of a circle, square, triangle or rectangle, the child can provide a verbal label for that shape.

* 2. Recognition - Given the verbal label "circle," "square," "triangle" or "rectangle," the child can select the appropriate drawing, cut-out or object from a set.

II. Cognitive Organization

A. Perceptual Discrimination and Orientation

1. Visual Discrimination

    a. Matching - The child can match a given object or picture to one of a varied set of objects or pictures which is similar in form, size or position.

    b. Recognition of Embedded Figures - Given a form the child can find its counterpart embedded in a picture or drawing.

    * c. Part/Whole Relationships - The child can structure parts into a meaningful whole:

        1. Given a model and a selection of parts the child can select those parts which are essential to the construction of the model.

        2. Given a model and an assortment of its parts, the child can arrange these parts to match the model.

2. Auditory Discrimination

    a. Sound Identification - The child can associate given sounds with familiar objects or animals.

    b. Copying Rhythms - The child can copy a rhythmic pattern (a by-product of this goal will be the promotion of physical activity on the part of the viewers).

    c. Rhyming Words - Given two or more words that rhyme, the child can select or supply a third rhyming word.

3. Subjective/Objective Discrimination - The child can distinguish between the objective (indisputable) properties of an object and the subjective (judgmental) properties which he ascribes to the object.

* B. Relational Concepts - The child can demonstrate his understanding of various relational concepts.

    * 1. Same/Different - This concept underlies all of the following relational concept categories.

    * 2. Size Relationships - Big/Bigger/Biggest; Small/Smaller/Smallest; Short/Tall.

    * 3. Quantitative Relationships - None, Some, More, Most, All, Less.

    * 4. Positional Relationships - Under, Over, On, Through, Around, Next To, First, Last, Up, Down, Beginning, End.

    * 5. Distance Relationships - Near, Far, Close To, Away From.

* 6. Temporal Relationships - First, Last, Before, After, Next, Beginning, End.

* C. Classification

* 1. Sorting (Which of these things is not like the others?) Given a group of objects several of which have an attribute in common, the child can sort out the inappropriate object on the basis of:

a.	size	d.	class
b.	form	e.	quantity
c.	function		

* 2. Classifying (Which of these things belongs with these?) Given at least two objects that define the basis of grouping, the child can select an additional object or objects that belong in the same group on the basis of:

a.	size	d.	class
b.	form	e.	quantity
c.	function		

* 3. Multiple Classification

* a. Property Identification - Given any object the child can name at least two properties of that object. Ex. "The ball is round and red."

* b. Multiple Class Inclusion and Differentiation - Given any two objects the child can recognize that they are alike on one dimension and different on another. Ex. "Both of these things are round but one is red and one is blue."

* c. Multiple Classification and Regrouping - Given any group of objects the child can:

* 1. Classify them on the basis of more than one characteristic. Ex. Given a set of red and blue circles and squares the child can divide the set into 4 subsets: a. red circles b. red squares c. blue circles d. blue squares.

* 2. Classify them on the basis of one characteristic (ex. color) and then reclassify the same objects on the basis of another characteristic (ex. shape). (The point will be made that there is often no single right answer.)

III. Reasoning and Problem Solving

A. Making Inferences

1. Inferring Antecedent Events - The child can suggest events which may have led up to a situation.

2. Inferring Consequent Events - The child can predict future outcomes that may result from a situation.

B. Generating Explanations and Solutions - Given a familiar problem, the child can provide adequate explanations and solutions to that problem.

C. Evaluating Explanations and Solutions - Given several possible explanations or solutions to a problem the child can evaluate these solutions in reality (trial and error) or in his mind (pretesting). When presented with alternative solutions he can select the best one.

IV. The child and His World

A. Self

* 1. The Mind and Its Powers - The child is aware of his mental powers. He understands that his brain has the capacity to:

a. Pretest Solutions
b. Remember
c. Imagine
d. Plan
e. Guess from progressively revealed clues.

2. Body Parts and Functions - The child can identify, label and state or recognize the function of such body parts as the:

a. head
b. nose
c. ear
d. eye
e. tongue
f. arm
g. elbow
h. hand
i. finger
j. leg
k. knee
l. foot

* 3. Audience Participation - The child will respond overtly to those sections of Sesame Street designed to elicit active participation.

4. Emotions - The child can recognize and label such emotions as:

a. fear
b. happiness
c. sadness
d. anger
e. surprise
f. pride

B. Social Units

1. Roles and Functions - Given the name of certain roles in the family and in the community the child can describe appropriate responsibilities associated with those roles.

ex. The child can name one or more principal functions of a father, mother, policeman, mailman, farmer, baker, fireman, doctor, dentist etc.

2. Social Groups and Institutions

   a. The Family and the Home

      1. The child recognizes that various types of structures all serve as homes.

      2. The child recognizes the family as a unit and can describe several types of family activities.

   b. The Neighborhood - The child is familiar with the social and physical boundaries of his own neighborhood.

   c. The City or Town - The child recognizes various structures, spaces, and points of interest which make up the city or town.

      ex. 1. The child is familiar with the concepts of a zoo, park, playground, airport etc. and with stores where various types of common items may be purchased.

      ex. 2. The child understands that there are many different cities, that they have finite boundaries, that various goods or products must be transported in and out, and that various modes of transportation are employed.

      ex. 3. The child identifies the respective functions of such institutions as the school, post office, and hospital.

C. Social Interactions

* 1. Differing Perspectives

   * a. The child realizes that different individuals or groups may have different reactions in similar situations.

   * b. The child demonstrates that he is aware of and values the feelings, preferences and ;modes of behavior of other individuals and groups.

* 2. Cooperation - The child recognizes that in certain situations it is beneficial for two or more individuals to work together toward a common goal.

   * a. Division of Labor - When a child is a member of a group that has a common goal, he realizes that the goal will be more easily achieved if each member of the group shares in the work or planning.

- * b. Combining of Skills - When a child is a member of a group that has a common goal, he realizes that the goal will be most easily accomplished if each member of the group contributes his own unique or special skill.

- * c. Reciprocity - The child realizes that in certain situations, in order to accomplish his goal, he must request the assistance of others and in turn assist them in accomplishing their goals.

* 3. Conflict Resolution - The child can provide adequate resolutions to conflict when he is presented with a familiar conflict situation.

D. The Man-Made Environment - The child is generally familiar with the form and functions of:

1. Machines and tools.

2. Buildings and other structures.

E. The Natural Environment - The child has a general awareness of the characteristics of:

1. Land, sky and water.

2. City and country.

3. Plants and animals.

4. Natural process and cycles.

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*high-priority items

Appendix C

INSTRUCTIONAL TECHNOLOGY RESEARCH FOR THE HANDICAPPED, FY 72

TITLE: PROJECT ME (MEDIA FOR THE EXCEPTIONAL)

Contractor: Dubnoff School for Educational Therapy
6345 Clybourn Avenue
North Hollywood, California 91606

Principal Investigator: Mrs. Florence Schaefer

The aim of this project is to create, develop and produce integrated units of instruction based on a multi-media, multi-sensory-systems approach to enhance the learning program for exceptional children age six months to seven years. Commercially available audio-visual devices and materials will be empirically evaluated in the classroom with respect to their application for the education of the exceptional child. Existing audio-visual materials will be integrated with book materials, manipulative materials and gross perceptual-motor exercises into a logical, meaningful progression of instructional stages and steps to be followed by a teacher over a prescribed period of time.

In conjunction with the Special Education Instructional Materials Center, University of Southern California, short term workshops in the application of media to exceptional children will be provided for persons from the field of special education and instructional technology.

TITLE: LANGUAGE INSTRUCTION TO FACILITATE EDUCATION (LIFE)

Contractor: National Education Association
1201 16th Street, N.W.
Washington, D.C. 20203

Principal Investigator: Dr. Glenn Pfau

Programmed language materials and methods to supplement or complement the language curriculums for hearing impaired children are being developed. Language materials are in the form of filmstrips, picture books, special reading materials, and a series of special dictionaries. Lessons developed in the project can be presented to the learner on a linear-programed teaching machine.

Developed language material is being tested in several schools for the deaf. Data are being collected from test sites and are evaluated on the feasibility of instructional approach and quality of material.

TITLE: EDUCATIONAL THEATRE PROGRAM FOR THE DEAF

Contractor: Eugene O'Neill Memorial Theatre Center, Inc.
305 Great Neck Road
Waterford, Connecticut 06385

Principal Investigator: Mr. David Hays

This project would provide intensive training in the theatre arts to qualified deaf applicants in hopes of promoting drama as an educational and creative force in schools and other programs for the deaf throughout the nation. Special consideration will be given to the particular gifts of the deaf -- mime, pantomime, full body expression and the elevation of the conversational manual communication into a high form of theatrical art. All this will be done through the curriculum set up for the acting program which consists of the following:

1. Acting
2. Theatre Laboratory
3. Dance
4. Directing
5. Sign Mime
6. Theatre History
7. Eastern Dance
8. Acting Workshop
9. Fencing and Tumbling

TITLE: A COMPUTER-BASED PROJECT FOR THE EVALUATION AND
DEVELOPMENT OF MEDIA FOR THE HANDICAPPED

Contractor: Syracuse City School District
409 West Genesse Street
Syracuse, New York 13202

Principal Investigator: Dr. Bernice Kipfer

This project is designed to demonstrate an effective and efficient computer-based system of evaluating and field testing educational media with a variety of handicapped children. Additionally, the project is concerned with developing new materials and demonstrating effective techniques for educating handicapped children with major emphasis upon maximum support of the learning process through media, tutoring, team teaching, and a systems approach to education.

The computer-based systems approach to evaluating, developing, and improving instructional media for the handicapped in this project is related to the planning and development of a student response storage and analysis system. This includes three major tasks: developing a media sample, testing a student response system, and field testing alternative methods of gathering data on the media.

TITLE: INDIVIDUALIZED INSTRUCTION FOR THE DEAF

Contractor: The Callier Hearing and Speech Center
1966 Inwood Road
Dallas, Texas 75235

Principal Investigator: Dr. Carl Nordwall

The contractor is developing a new instructional system in the Elementary Department of the Dallas Pilot School. The aim is to demonstrate the efficiency of a systems based, educational technology oriented instruction program for the deaf. The project will also seek to develop curricular objectives and content on a continuum basis identified by levels of competence rather than being expressed in levels denoted by a grade or year.

Studies will be made to determine how best to use existing instructional materials, instructional technology and to test existing materials of programmed nature. Deployment of staff for economy of time and learning as well as the use of para-professionals will be examined.

TITLE: MEDIA DEVELOPMENT FOR VISUALLY IMPAIRED CHILDREN

Contractor: Texas School for the Blind
1100 West 45th Street
Austin, Texas 78756

Principal Investigator: Mr. Charles Russell

Selected commercially available and teacher-produced educational materials are being evaluated. Attempts are being made to demonstrate the use of such materials in a developmental program designed to achieve maximum perceptual-cognitive ability of visually impaired children. Developmental sensory training materials in all three sensory modes (auditory, tactual, and visual, where there is residual vision) will be demonstrated and evaluated. This project's major goal is to stimulate developmentally the sensory awareness of visually impaired children to achieve maximum proficiency in educational and daily living skills. Films and printed material will be developed for the purpose of teacher training in the use of special media materials.

All developed materials will be made available to Instructional Materials Centers and the American Printing House for the Blind for reproduction and distribution.

TITLE: MEDIA UTILIZATION SERVICES FOR TEACHERS

Contractor: Atlanta Public Schools
224 Central Avenue, S.W.
Atlanta, Georgia 30303

Principal Investigator: Dr. Gil Tauffner

Efforts of this project are centered on assisting teachers in the identification, selection, production and utilization of media in the educational continuum at all grade levels. The immediate objective of the project is to plan, develop and demonstrate a systems approach to facilitate the utilization of media to improve instruction for handicapped children. The systems approach includes the development and unification of a media team which will plan and set up procedures for facilitating the utilization of media.

In a prescribed manner, appropriate media will be used to remediate diagnosed learning problems. Five selected target schools will demonstrate the utilization of media and instruct teachers in development and design of new media to aid in instruction.

TITLE: SPEECH TRAINING AIDS FOR THE DEAF

Contractor: Bolt, Beranek and Newman, Inc.
50 Moulton Street
Cambridge, Massachusetts 02138

Principal Investigator: Dr. Ray Nickerson

The long-range goal of this project is the development of a cost-effective computer-based system of non-auditory aids for speech training for the deaf. The envisaged system would incorporate a battery of training aids that could be applied selectively to various aspects of speech-training problems, and a specification of procedures for using these aids in a teaching situation. This battery of aids would be accessible to the teacher and/or student through an executive program designed to maximize ease of use. The system itself would be developed in such a way as to permit continuing augmentation and refinement.

The short-range goal is the development of an experimental facility that will (1) permit controlled objective evaluation, in the contex of a school for the deaf, of specific training aids that have already shown promise, (2) facilitate the implementation and testing of additional training aids, and (3) provide a functioning system that can evolve gracefully into a prototype of the system that constitutes the long-range goal of this project.

TITLE: TRAINING EARLY CHILDHOOD EDUCATORS: COMPUTER-BASED
INSTRUCTION COURSES IN DIAGNOSTIC TEACHING

Contractor: The Pennsylvania State University
University Park, Pennsylvania 16822

Principal Investigator: Dr. Phillip Cartwright

The purpose of this project is to develop two complete computer-assisted instruction courses in diagnostic teaching. The courses will be designed to teach regular elementary and preschool teachers and child care workers how to work effectively with children who have learning problems because of mental retardation, cultural disadvantage, emotional disturbances, and/or learning disability. The emphasis will be on inservice training of regular classroom teachers (not special educators) and toward preservice and inservice child care workers. The courses will be geared especially toward those persons who may not have the opportunity to return to a college campus or other training center for special instruction in teaching handicapped children.

This project should contribute to education by demonstrating the use of a new technology in the development and evaluation of innovative curricula for the education and training of teachers and child care workers. It should also integrate and make available relevant data and teaching methods developed by Federally financed programs in special education and early childhood education.

Personnel in the Department of Special Education and the Computer Assisted Instruction Laboratory at The Pennsylvania State University will cooperate to develop and program the CAI courses. The courses will be prepared and made ready for distribution by means of mobile computer-assisted instruction facilities.

TITLE: REGIONAL AUDIOVISUAL INSTRUCTIONAL MEDIA SERVICES CENTER
FOR MENTALLY HANDICAPPED CHILDREN

Contractor: Sallisaw City
Sallisaw, Oklahoma 74955

Principal Investigator: Mr. Fred Catron

This project involves the establishment of an audio-visual and instructional media services center for mentally retarded children. This center will serve a nine county area which has 23 classes with a total of 319 mentally handicapped children, 80 percent of whom are Indian. The center will select and categorize materials, maintain a continuous contact with teachers to be served, and provide inservice type training to teachers of the mentally retarded with the latest materials available. A regional organization will be developed to encourage the use of audio-visual instructional media as a logical component of a well planned lesson which would be equally available to mentally handicapped children in all participating counties.

TITLE: STRENGTHENING THE VISUAL PERCEPTION OF DEAF CHILDREN

Contractor: New Mexico State University
Box 34
Las Cruces, New Mexico 88001

Principal Investigator: Dr. Robert Sachs

The study attempts to determine whether two different types of training materials will improve the visual perception of pre-school deaf children. The two types of training are: (1) problem solving learning sets training, conducted both individually and in groups of 40 children, with use of both discrimination learning material and various visual projectors and (2) use of varied eye-hand coordination toys for 40 children in a group free play situation. There is also a control group of 20 children which either is given no training or is given training with auditory perception materials in a free play situation.

Early test scores of the children will be compared with those at the end of the training period. A program of instructional strategies and multi-sensory materials will be developed to remediate perceptual deficiencies.

TITLE: DEVELOP AND EVALUATE A TRAINING FILM SERIES IN TOTAL COMMUNICATION TO FACILITATE LANGUAGE GROWTH, COMMUNICATION AND CHILD-PARENT INTERACTION IN YOUNG DEAF CHILDREN

Contractor: Western Maryland College
Westminster, Maryland 21157

Principal Investigator: Dr. McCay Vernon

The project will produce a series of films for use by preschool deaf children, their families, and professionals. The films are purposed to facilitate language growth, communication, and basic education in young deaf children. The overall planning and the production of the initial 25-minute film and four of the teaching films would be produced, piloted and evaluated during the first year. A set of 36 progressive short teaching films and five 16mm films will be produced over the three year period. (This is the first year of a three-year project.)

TITLE: DEVELOPMENT AND EVALUATION OF TRAINING FILM AND RELATED
MATERIALS FOR IMPROVING COMMUNICATION BETWEEN POLICE
AND DEAF PERSONS

Contractor: Michigan Association of the Deaf
1828 Zimmerman Street
Flint, Michigan 48503

Principal Investigator: John C. Claveau

The purpose of this project is to design, produce and evaluate a three-part training film with related materials for law enforcement officers and members of the deaf community. The training film will present contemporary situations as they might occur and suggest a plan for the police and deaf citizens to follow to establish communication. The production of this film and related materials will facilitate joint training sessions with both policemen and participating deaf persons from the community.